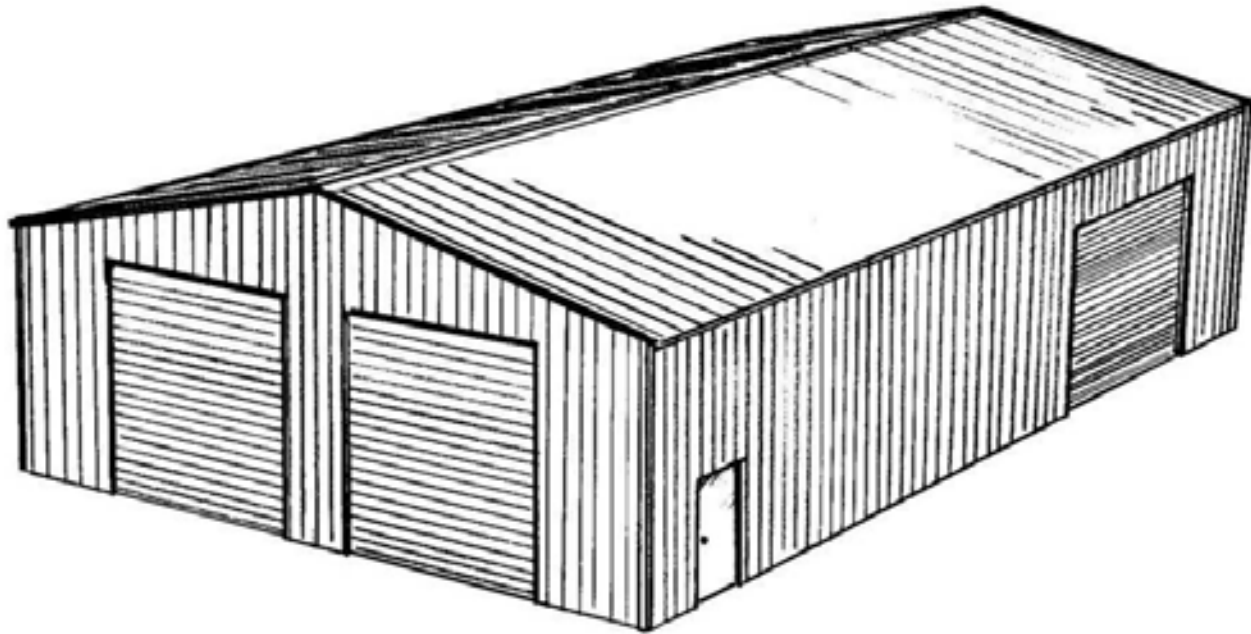




**UNIVERSAL ASSEMBLY INSTRUCTIONS
FOR VERSATUBE BUILDINGS
CONTRACTOR SERIES
2" X 4" FRAMES**



Our unique assembly process quickly transforms the individual pieces into a finished structure that will give you years of service. Great care has been taken to ensure complete satisfaction with your purchase. In the unlikely event that there are any missing or damaged parts or if you simply need technical assistance, please call our Toll Free Hotline at 1-800-900-7222 and your questions will be addressed promptly. Thank you for choosing the Versatube Building System.

ABOUT THE CONTRACTOR SERIES BUILDINGS:

Contractor series buildings are buildings with 2" x 4" frame sections. The roof pitch is 3/12. They can be built using base rails or base plates. The end walls are typically 2" x 3" posts on 4' centers. The typical frames are on 4' or 5' centers, however, some buildings can be built on 6' centers with low live loads. The 2" x 4" frame allows us to construct buildings up to 16' at the eave and up to 52' wide. Most of our buildings are sheeted vertically using hat channel for the roof purlins and side girts. We use 1 1/2" square tubes flush mounted for the end wall girts. Hat channel can be used for end wall girts. This requires that you frame along the gable rafters and frame out with 1 1/2" square tubes around doors and windows. The buildings can be built using horizontal side panels and vertical roof panels. We recommend 26ga. panels or diagonal wind bracing if side metal is applied horizontally. For purposes of these instructions we will be describing the frame layout and construction for vertically sheeted buildings with flush mounted end wall girts.

Our buildings are typically placed on a concrete slab with footings. Buildings can be constructed using strip footings or concrete piers at each post in place of the slab with footings.

Because the building frames are 2" x 4" 14ga. tubing and the buildings are typically taller at the eave the assembled trusses are too heavy to be lifted by hand. You will need a small crane or a boom attachment to a skid loader or tractor to lift and set the trusses in place.

SAFETY AND HAZARD INSTRUCTIONS

IMPORTANT

Read the following safety warnings and all instructions in their entirety prior to installation. If you have questions or are missing any parts, contact VersaTube Building Systems Customer Service at 1-800-900-7222 before proceeding.

WARNING:

This structure and its manufactured components are engineered per the instructions and engineering plans provided by VersaTube Building Systems. The use of any framing components or materials in the erection of this structure that are not produced or provided by VersaTube could negatively affect the structural integrity and will negate any warranty provisions. VersaTube Building Systems and its authorized dealers are not responsible for any structural collapse or failure to perform resulting from additions, add-ons, or manipulation of non-VersaTube components and/or failure to follow approved instructions.

WARNING:

Metal parts may get hot when exposed to high heat or direct sunlight. Avoid contact with skin and wear protective gloves and clothing to prevent the possibility of burns.

WARNING:

Avoid installation on windy days as wind may create hazards during the installation process. Wind may blow material or cause partially installed components to collapse prior to being secured or fully installed. The weight of the components or structure may cause serious injury if it should collapse.

WARNING:

Metal conducts electricity and electrical shock hazards exist since the structure is made of metal. During installation or storage, keep the structure and all components away from electrical sources. Make sure that your selected location is away from power lines, underground cables, and any other source of electrical power. Serious injury or even death may occur if contact is made with electrical current.

WARNING:

If the structure is moved once it has been installed, be certain to inspect all components and conditions and follow each and every step of these instructions to make certain that the structure is securely anchored, properly installed, and aligned. Failure to follow these steps could lead to collapse of the structure and may result in serious risk of injury.

WARNING:

In the event that your structure is enclosed, be sure to provide proper and adequate ventilation and egress and ingress. Hazardous, poisonous or noxious substances should not be stored in the structure absent proper ventilation and all warnings and instructions of the manufacturer of the substance. Also, proper ingress and egress should be provided to prevent adults or children from becoming trapped inside the structure.

WARNING:

If metal panels are selected to cover all or a portion of your structure, be careful of the sharp edges which may cause cuts or lacerations. Wear protective work gloves and suitable clothing for protection and always take care when handling metal parts. **Always wear safety goggles or glasses when cutting metal or driving/drilling screws.**

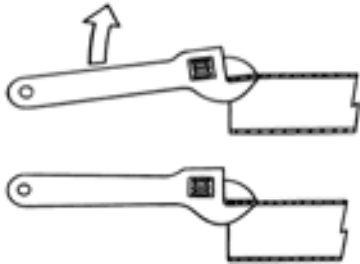
ATTENTION:

IT IS IMPORTANT THAT YOU READ THE FOLLOWING NOTE BEFORE STARTING THE ASSEMBLY OF YOUR BUILDING

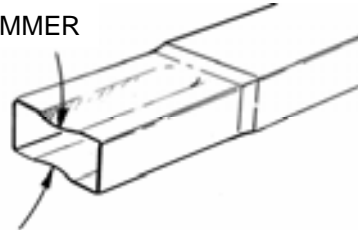
NOTE:

If during the installation process you have difficulty fitting frame components together, use an adjustable wrench to open end of receiving tube as shown below, left. Close wrench down around bent portion of tube and bend wall outward.

It may also be helpful to hit the center of the swaged at the end of the tube to create more of a lead.



STRIKE WITH HAMMER



What you'll need:

Torque Setting
Cordless (14 or 18 volt)
Or Electric Screw Gun
With 5/16" Socket Drive
and Extension



Utility Knife



One must be able to comfortably reach the peak of the building 10' to 22' high Depending on building width and height. An Extension ladder can also be helpful when installing sheet metal.



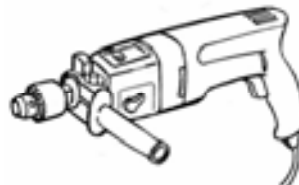
Safety Goggles
Or glasses



Hammer



Hammer
Drill



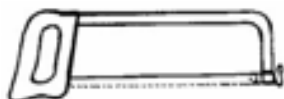
Masonry
Drill Bit
1/2" x 8"
Drill depth



Work Gloves



Hack Saw or
Circular saw with
Abrasive disk



Tape Measure



Level



Pencil/Marker and
Felt Marker



Motor Cycle or
Ratchet Straps



(May be required to pull
frame plumb.)

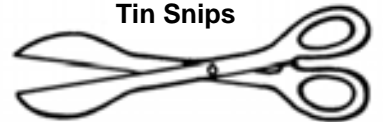
Wrench, 3/4" & 1/2"



Chalk Line and
Mason Line or
Nylon String



Tin Snips



Adjustable wrench



Vise grip or other
quick clamp



Aviation Snips



Because of the size of most of the contractor series buildings you will need a small crane or skid loader with a boom attachment to lift the trusses into place. You may also want to rent a scissor lift to create a movable work platform. You will also need additional hat channel or 2x4s to use as bracing to plumb the frame.

BASIC PARTS LIST: SIZES AND QUANTITIES WILL VARY BY BUILDING WIDTH AND LENGTH
SEE THE PACKING SLIP WITH YOU BUILDING FOR PART NUMBERS AND QUANTITIES.

8' or 10' STARTER BASE RAIL
Used on buildings with 4' or 5'
on center post spacing



PEAK



6' STARTER BASE RAIL
Used on buildings with 4' on
center post spacing



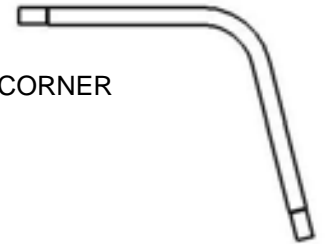
SIDE POST IS A CUT 2X4 TUBE (6' LONG)

RAFTER IS A CUT 2X4 TUBE

8' or 10' BASE EXTENSION
RAIL Used on buildings with
4' or 5' on center post spacing



EAVE CORNER



4',5' or 6' BASE EXTENSION
RAIL
6' on center post spacing



END WALL HEIGHT
EXTENSION



HEIGHT EXTENSION



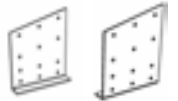
TRUSS BRACE END TIE 2" X 2"



TRUSS BRACE CENTER TIE 2" X 2"
SWAGED BOTH ENDS



COLLAR TIE BRACKET
LEFT AND RIGHT



HAT CHANNEL (ROOF AND SIDES)
4', 5', 8', 10' or 20' LENGTH.



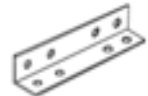
ANGLE BRACKET



END WALL GIRTS 1 1/2 SQUARE



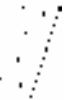
700-BK10 BRACKET



INSIDE CLOSURE



FLAT BRACKET



OUTSIDE CLOSURE



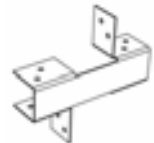
SINGLE PURLIN BRACKET



#12 X 3/4" SELF-DRILLING SCREW



DOUBLE PURLIN
BRACKET



#10 PAN HEAD, SELF-
DRILLING SCREW



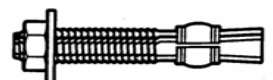
1" SELF-DRILLING SCREW
WITH WASHER, PAINTED



BUTYL SEALING TAPE



CONCRETE
WEDGE ANCHOR



PARTS NOT SHOWN ARE 2X3 OR 2X4 STRAIGHT LENGTH
PARTS. SHEET METAL AND TRIM ARE SHOWN IN THAT
SECTION.

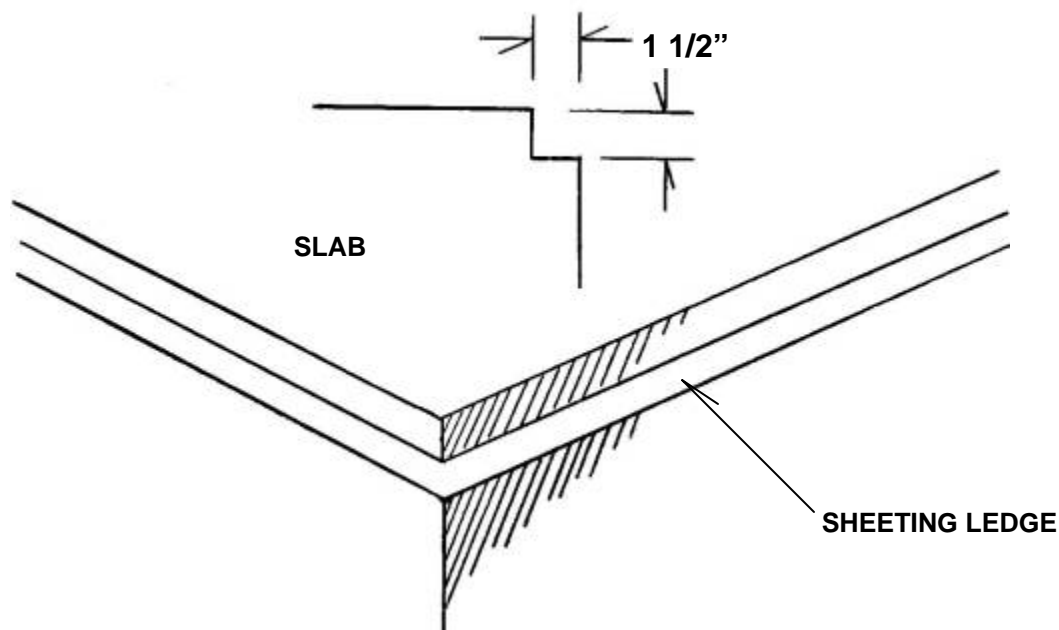
FOUNDATION NOTES

- You should check with your local building official or Code Enforcement Office for the foundation requirements in your County. You will need to know the frost depth, the wind load and the snow load to determine the size and depth of the footings.
- If you order an engineering drawing package it will include a foundation drawing. The typical VersaTube foundation is a 4" thick slab with 12" wide x 12" below grade footing. The footing has two runs of #4 rebar running the length of the footing, one 3" from the bottom and one 5" above that rebar. The rebar is centered in the footing. We also recommend a welded wire fabric reinforcement 6/6/10/10 at mid-depth in the slab. You could also use #3 rebar in a square grid pattern 24" on center.
- The ground should be compacted to a minimum of 1000 PSI bearing pressure.
- If you have a frost depth deeper than 12" you will need to extend the footing depth down to or below the frost line.
- We recommend the use of a 1 1/2" x 1 1/2" sheeting ledge around the top edge of the slab. This will close off the bottom of the side metal panels and prevent water from running onto the building floor.
- If you do not require a concrete slab, you can pour concrete strip footings without a slab.

PIERS: You can use concrete piers in place of the slab and footing or strip footing. The piers must be sized to support the dead load of the building plus the roof snow load. The piers must be deep enough to resist the wind uplift on the building and be at least as deep as the frost line. Our typical pier is 12" in diameter. Larger buildings and buildings with a heavy snow load will require a wider pier. Piers are typically located at every post.

CONCRETE: We typically speck 2500 psi concrete, however some Counties require a denser concrete. Please check with the building department for a recommendation. If your building is located in a high wind area you may need to increase the concrete density to get better pull out ratings on your anchors.

ANCHORS: We recommend concrete wedge anchors be used to anchor your VersaTube building. On the sides of the building we use 5/8" x 5" anchors with the base plates and 5/8" x 7" anchors with base rails. On the end walls we use 1/2" x 4 1/2" anchors for base plates and 1/2" x 7" anchors for base rails.



STEP 1 IF YOU ARE USING BASE RAILS: BASE RAIL ASSEMBLY

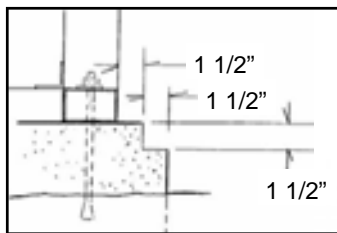
If you are using the base plates proceed to the next page

Place the starter base rails in the front corners of the building 1 1/2" in from the sheeting ledge on the sides of the slab. (See FRONT DETAIL below) The outside dimension of the base rails should be your building width (24' to 52') The starter base rails are either 6'-2", 8'-2" or 10'-2" long with 2 or 3 welded vertical pins. The 6'-2" rails are for 6' on center buildings, the 8'-2" rails are for 4' on center buildings and the 10'-2" rails are for 5' on center buildings. Now, insert 8' or 10' length extension base rails into the starter base rails as shown until you get to the desired building length. NOTE: the last base rails that you insert to get to your building length may be 4' or 5' base extensions.

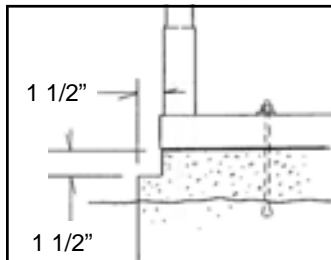
The vertical pins should be on 4', 5' or 6' centers. As you insert base extensions measure the distance from pin to pin and adjust the joint so that all the pins are on 4', 5' or 6' centers. (46", 58" or 70" between pins)

HINT: IT may be helpful to cut a spacer board 46", 58" or 70" to use as a guide for pin spacing. When you are sure that you have all the base rails in the proper location, fasten each joint with two #12 self-drilling screws on the top of the base rail.

SIDE GARAGE DOORS: If you will be installing garage doors in the side of a building you will be removing 2 side posts. Typically you will remove two 6', one 8' or 10' base extension rail and start the base rail run again with a starter 4', 5', 6', 8' or 10' starter base rail. The distance between pins at the opening will be 142" for 4' or 6' on center buildings and 178" for 5' on center frames.

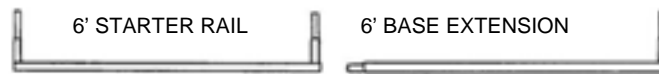


FRONT VIEW

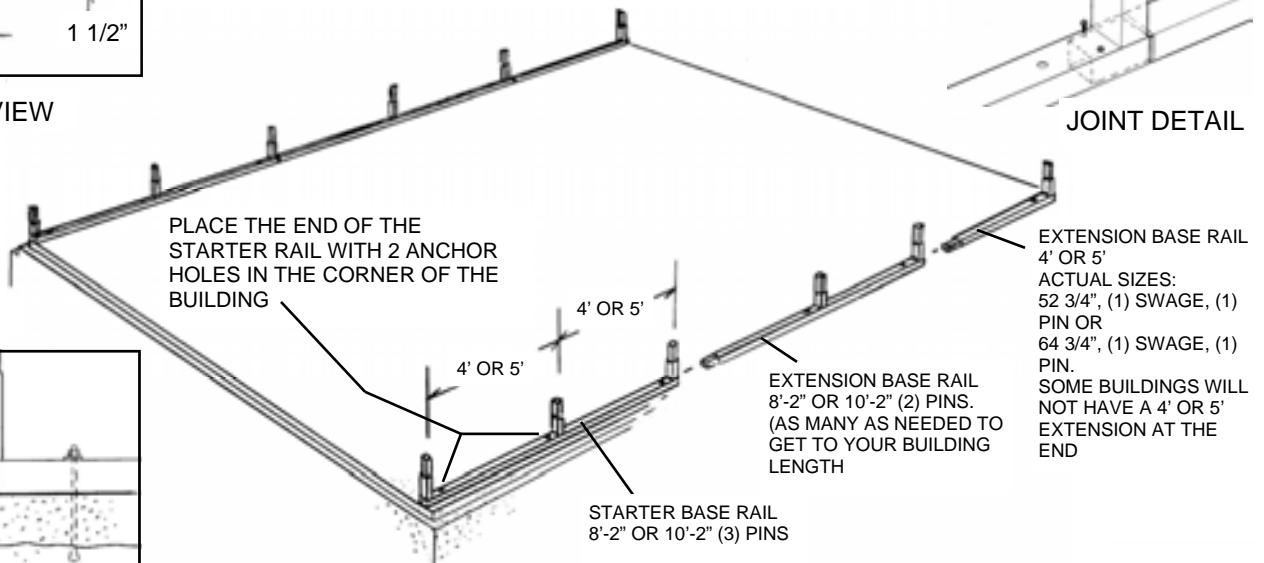


SIDE VIEW

LAYOUT FOR 6' ON CENTER BASE RAILS



JOINT DETAIL



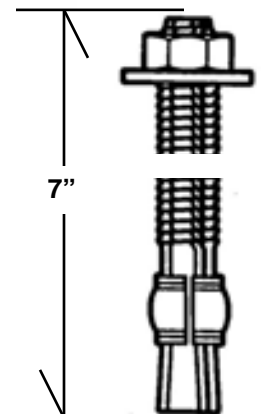
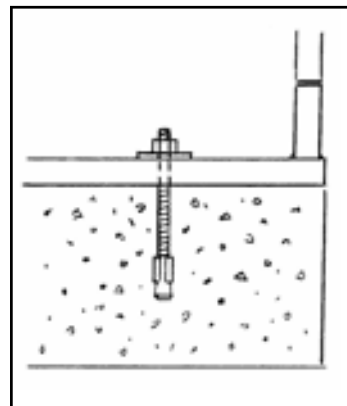
ANCHORING THE BASE RAILS:

Check with your local building official to see if concrete expansion bolts are acceptable in your area. Some regions may require adhesive anchors. We recommend 5/8" x 7" expansion anchors with a 5/8" flat washer.

INSTALLATION:

Use a 5/8" concrete bit in a hammer drill to drill a 5" deep hole in the slab. Use the anchor hole in the tube as a guide. Place the washer and nut on the top of the bolt with about 2 threads showing. Tap the bolt into the hole with a hammer and tighten the nut until it is good and snug. Do not crush the base rail tube.

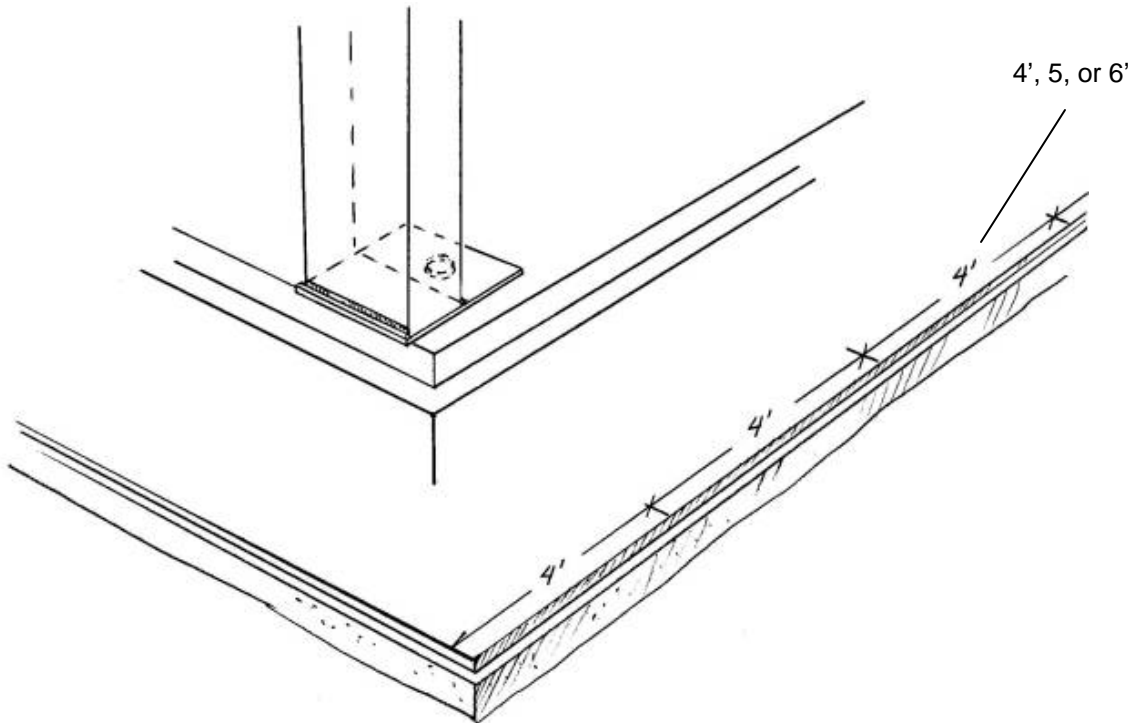
Note: Before you drill holes in concrete be sure that you have secured the joint between base rails with (2) # 12 x 3/4" self-drilling screws. This will keep the base rails from vibrating apart.



STEP 1 IF YOU ARE USING BASE PLATES: SIDE POST LAYOUT

STEP 1: MARKING THE SIDE POST LOCATIONS

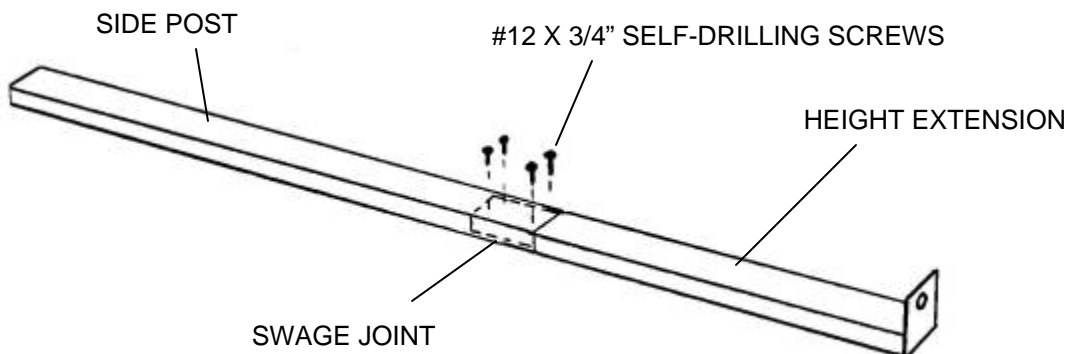
Using a pencil or other marking device, on the top of the slab mark the location of the leading edge of each side post. The space between marks will be 4', 5' or 6'. Make these marks down the full length of the building on both sides of the building. If you use a speed square to mark the line on the slab and make the line about 6" long you will be able to see the line from both sides of the post when you install the posts.



SIDE POSTS AND HEIGHT EXTENSIONS

If your building is 10' at the eave, you will not be installing a height extension. The base plate is welded to the bottom of each side post. The side post for a 10' building is a 2" x 4" x 6' tube with a anchor or base plate welded to one end. If your building is 12' at the eave you will assemble a 6' side post (no plate) to a 2' height extension. The height extensions have a base plate welded to the bottom. A height extension has one end swaged or reduced to fit into the side post. The swage is 6" long. If your building is 14' at the eave you will use a 4' height extension. A 16' building uses a 6' height extension.

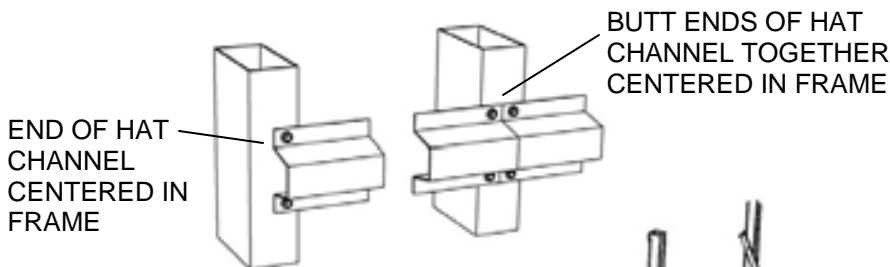
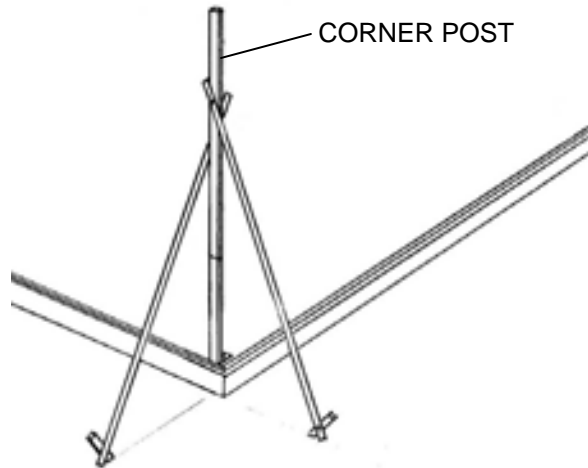
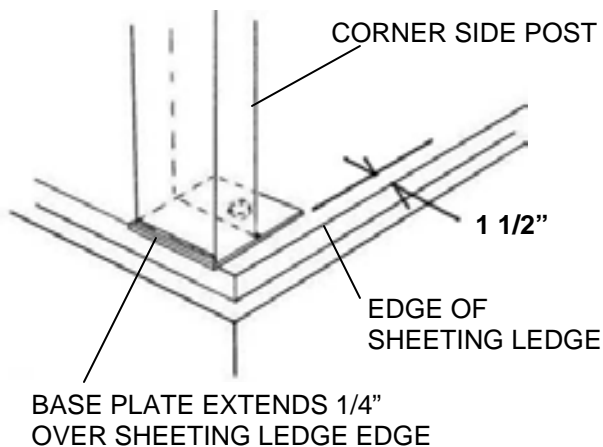
ASSEMBLY OF SIDE POST TO HEIGHT EXTENSION: The side post is a cut piece of tubing 2" x 4" x 6'. Insert the top of the height extension into the side post and attach with (4) #12 x 3/4" self-drilling screws.



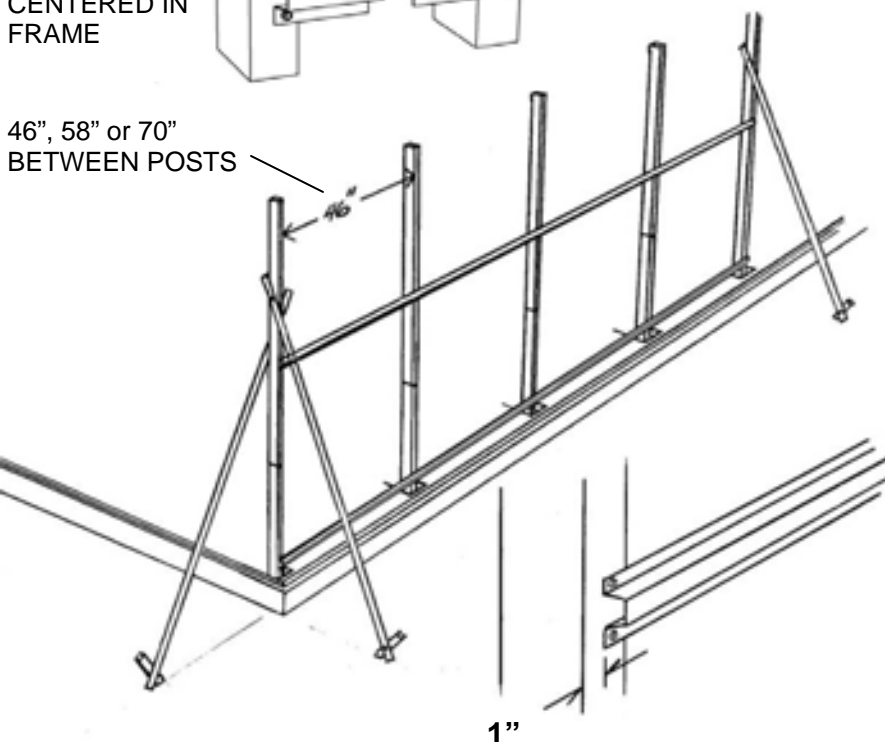
STEP 2: POSITIONING AND ANCHORING THE SIDE POST/ HEIGHT EXTENSIONS ON THE SLAB

The outside of each post should be set 1 1/2" from the edge of the sheeting ledge. This is the space provided for the 1 1/2" high hat channel girts. The corner post should be flush with the sheeting ledge. (If you are using hat channel for the end wall girts the corner post will be 1 1/2" from the sheeting ledge.) The anchor portion of the base plate is turned toward the inside of the building as shown. All of the additional side posts will face the same direction unless it is necessary to turn them the other direction at a door opening. The corner post at the other end of the building will be turned back to the inside of the building.

The base plates will be attached to the slab with 5/8" x 5" concrete wedge anchors. Position the side post assembly, mark the location for the anchor bolt, remove the side post assembly. Using a 5/8" concrete drill bit in a hammer drill, drill a hole in the slab 5 1/2" deep. Place the flat washer on the anchor bolt and thread the hex nut on to the bolt until about 2 threads show above the nut. Place the side post assembly back in place, insert the anchor bolt into the hole and tap it in with a hammer. Tighten the nut. You must then plumb the post side to side and front to back and brace the post in place with a diagonal brace to a stake in the ground on the outside of the building. A wood 2x4 or additional pieces of hat channel can be used as braces.



46", 58" or 70"
BETWEEN POSTS



INSTALLING ADDITIONAL SIDE POSTS

Position and anchor all additional side posts as you did the corner post on 4', 5' or 6' centers using the post locating marks you put on the slab. Install at least two runs of hat channel girts down the wall.

This will line up and hold the posts plumb and properly spaced at 4', 5' or 6' centers.

Hint: You may want to cut a spacer board to set the space between post as you install hat channel girts. The first or lower run of hat channel is 2" from the slab. You can use 2x3 or 2x4 tubes laid on their side as a spacer under the lower edge of the hat channel. The ends of the hat channel should fall in the center of a side post. Attach the hat channel with #12 x 3/4" self-drilling screws. Add additional diagonal braces as needed down the length of the building.

All bottom runs of hat channel are 2" from the slab. The on center spacing of hat channel runs on different eave height buildings will be different.

On 10' buildings: 38" on center.

On 12' buildings: 46" on center.

On 14' buildings: 40 1/2" on center.

On 16' buildings: 46 1/2" on center.

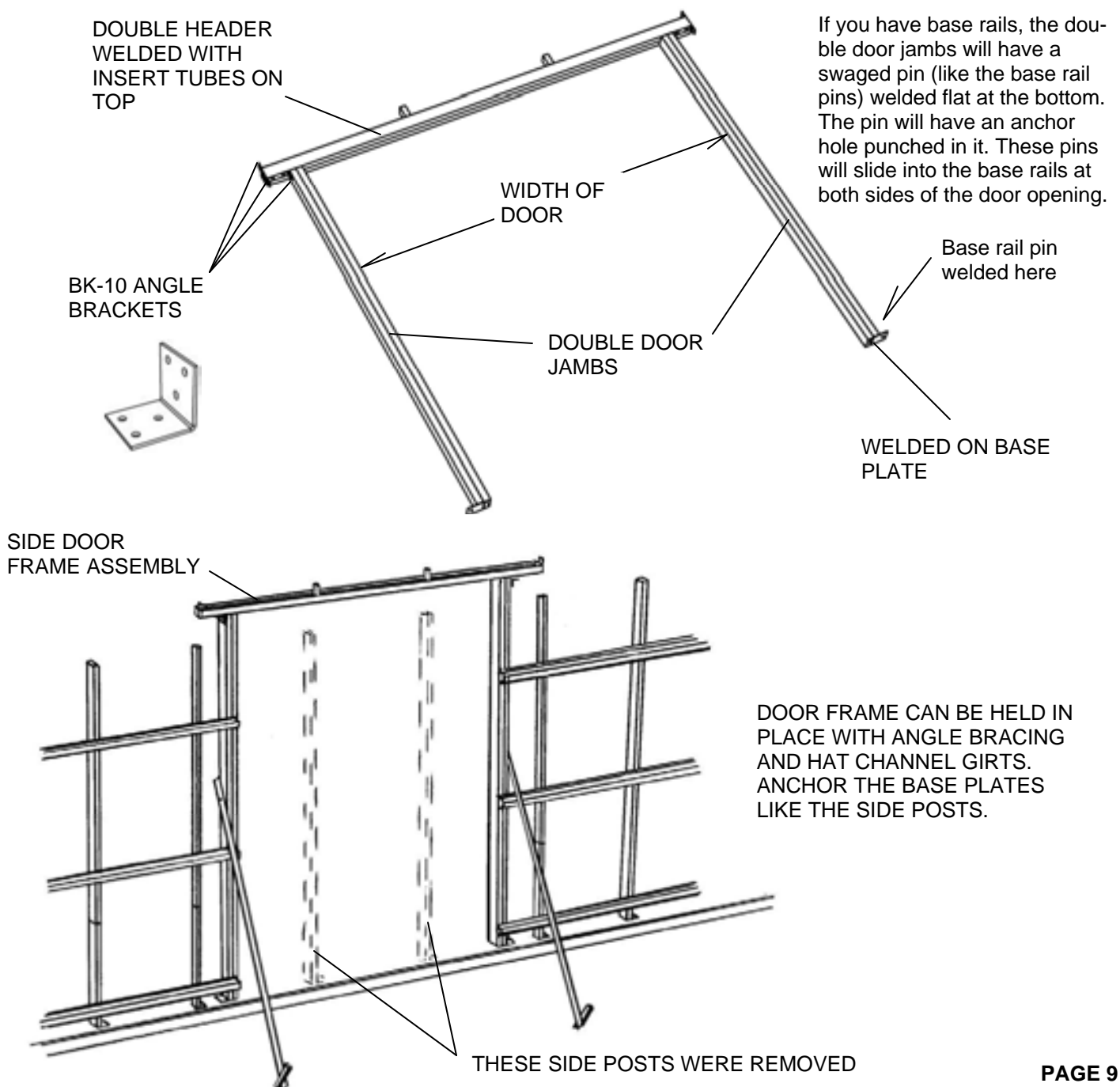
INSTALLING A SIDE GARAGE DOOR FRAME

The following assembly instructions are for a typical side door 10' wide x 2' shorter than the eave height. Side doors are typically 10' wide because we don't like to remove more than two side posts. There are exceptions to this rule. Please see your building drawings for details on the side door in your building as well as door location.

If you have a side garage door in your building you will have to skip or remove two of the side posts. In place of the two side posts you will install a side door assembly. A side door assembly has two double jamb posts (the height of the door opening) and a double header with insert tubes welded on the top. The door jamb assembly is two 2x4x door opening height posts welded together and a base plate welded to the bottom for anchoring to the slab. The door header is two 2x4 tubes long enough to span the opening (on 4' and 6' on center buildings the header is 142" long.) On top of the header we weld 1 3/4" x 2 3/4" x 4" insert tubes. These tubes will fit inside the eave corners of the truss. They are on 4', 5' or 6' centers. Attach the door header to the double jamb posts with BK-10 angle brackets.

Also attach BK-10 angle brackets to the top and bottom of the header flush with the ends. These will attach to the truss eave corners when they are installed.

Locate the assembly on the slab between the side posts per your drawing and anchor the plates to the concrete slab and brace the assembly to be plumb and square.



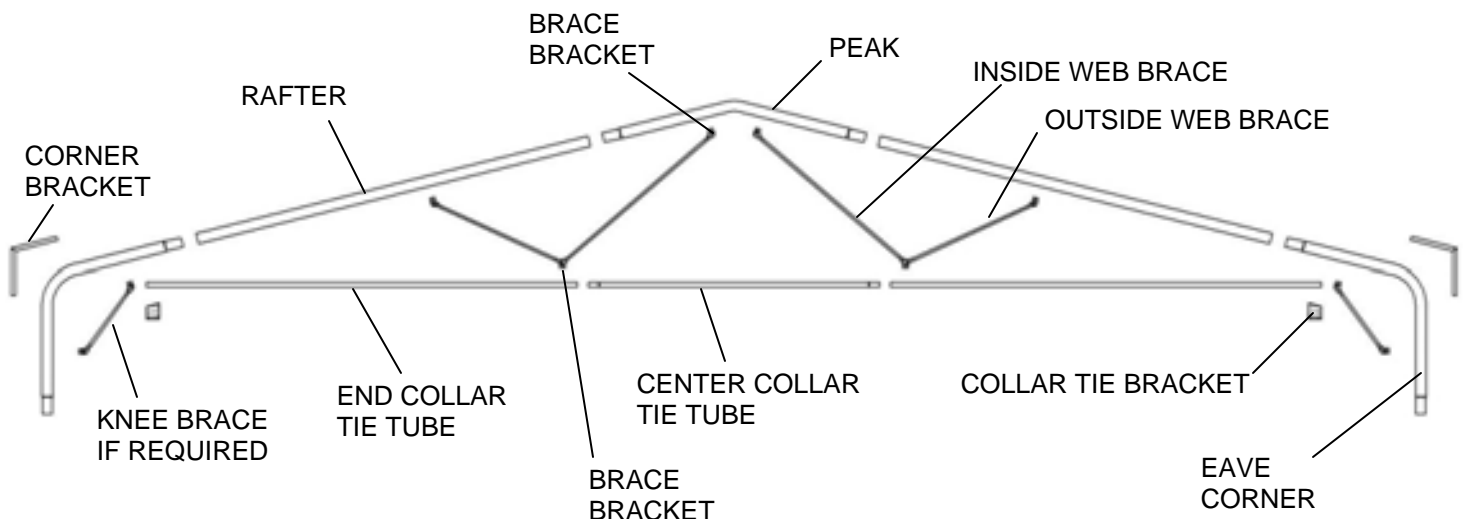
STEP 3: ASSEMBLING THE TRUSS

Note: The two end trusses will have no collar tie or bracing. The basic interior truss has a collar tie and the W web Assembly. Many of the buildings will require the use of knee braces in the corners. All trusses have the corner brackets. When one or both ends of a truss are located over a side garage door the eave corner may be cut down to fit (see your drawing package) In locations that have a heavy snow load or a high wind load the truss/knee brace design may have to be changed (see your drawing package). *Some buildings 24' wide and under may have a truss brace with out the web. A type 2 or standard truss brace will have one center vertical 1 1/2" square with BK-30 brackets at both ends.*

A typical truss frame has 13 basic parts: 1 peak, 2 rafters, 2 eave corners, 2 corner brackets, 1 collar tie center tube, 2 collar tie end tubes, 2 collar tie brackets (1 left & 1 right), 2 inside web braces, 2 outside web braces and 6 brace brackets with hardware. The knee braces (two) are not required on all buildings. The length of rafters and braces will depend on the width of the building. (Note, your building may have a different truss. See your drawings for truss brace layout)

ASSEMBLY: Use #12 x 3/4" self-drilling screws and screw gun with 5/16" socket with extension in all assembly operations.

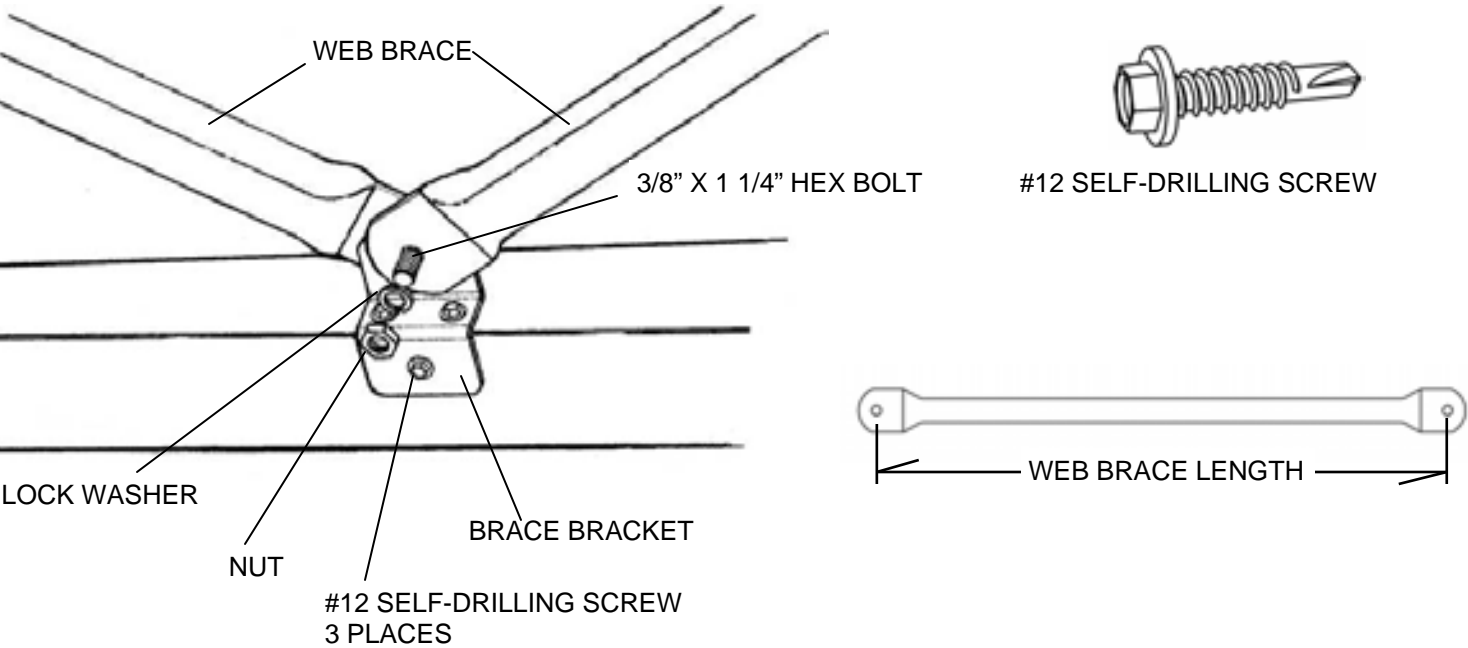
1. Install a rafter on both ends of the peak. Use 4 screws in each joint
2. Install a eave corner at the other end of each rafter. Before you install screws, measure from the outside of one eave corner to the other and set the dimension at the building width. (Example 30', 40' or 50') Keep the joint spaces equal on both sides of the assembly. This will keep the peak centered in the building. Use 4 screws in each joint.
3. Attach eave corner brackets (shipped unbent) to the eave corner by bending the bracket around the eave corner. Use a straight edge to ensure that the bracket is flush against the eave corner. Install 2 screws on each side of the truss at both ends of the bracket. This will require turning the truss over.
4. Join the 3 collar tie pieces. (1 collar tie center tube and 2 collar tie end tubes) Use a straight edge to make sure the assembly is straight and install 8 screws in each swage joint.
5. Attach a right collar tie bracket on one end of the assembly and a left collar tie bracket on the other end. Fill all of the screw holes.
6. Center the collar tie assembly in the frame (approximately 18" from outside of truss) and attach the brackets to the eave corners. Fill all of the screw holes.
7. The web braces are 1" square tubes with flattened ends and 1 hole. The length of a web brace is from the center of one hole to the center of the other hole. Braces are attached to the brackets with 3/8" x 1 1/4" hex bolts, lock washers and nuts. The brackets are attached to the frame with 3 self-drilling screws. Two braces can be bolted to the same bracket.
Install the first 2 brackets on the under side of the peak about 7 3/4" from the center line of the building.
Attach one end of the inside (longer) brace to the bracket. Do not tighten at this time. (x2)
Attach the other end of the inside brace to another brace bracket on the same side as the other bracket. (x2)
Attach a outside (shorter) brace to the opposite side of the same bracket. Do not tighten at this time. (x2)
Attach the other end of the outside brace to another brace bracket on the same side as the other bracket. (x2)
Make sure that the collar tie is straight and attach the brackets with the 2 braces connected to the collar tie. (x2)
Attach final brackets to the rafter and then tighten all bolts and nuts.
8. Knee Braces: Knee braces are the same as web braces. The typical knee brace is 30" long for contractor series buildings. You should check with our engineering department to see if knee braces are required on your building. If you are installing knee braces attach a brace bracket to the under side of the eave corner about 1" from the end of the collar tie. Attach a Knee brace to the bracket and a bracket to the lower end of the knee brace. Attach the lower bracket to the lower portion of the eave corner. Repeat on the other opposite end of the truss. Tighten all nuts and bolts securely.



SEE THE NEXT PAGE FOR MORE DETAIL ON BRACKETS AND ASSEMBLY

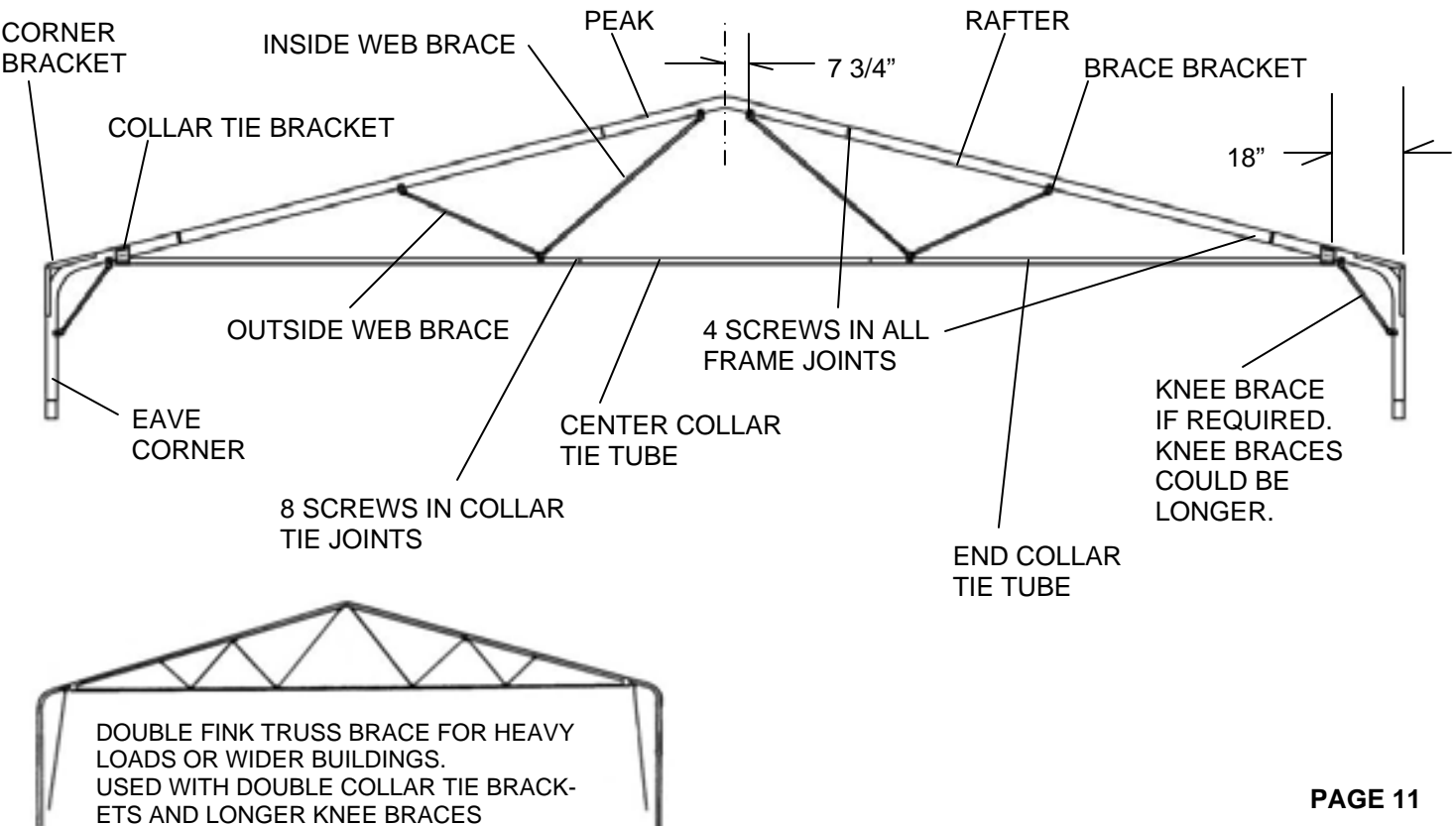
WEB BRACE AND BRACE BRACKET

The illustration below is a web brace to brace bracket joint. This illustration shows two braces to a bracket.



TYPICAL TRUSS

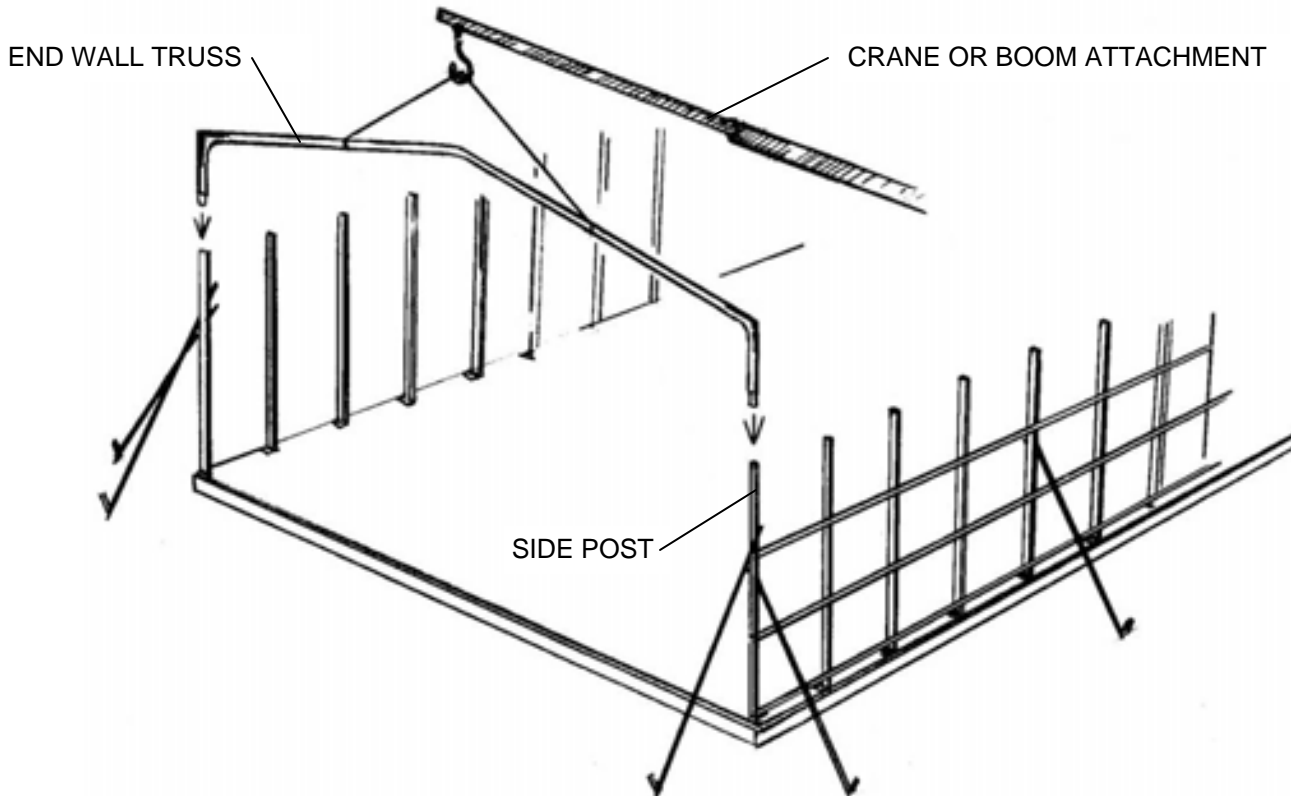
CHECK YOUR DRAWINGS FOR THE BRACE LENGTHS FOR YOUR BUILDING



STEP 4: INSTALLING THE END WALL TRUSS

You will need a crane or boom attachment to a skid loader to lift and install the trusses to the side posts. You should also have three people for this operation. One person to operate the crane and one on both sides of the building to guide the swaged ends of the eave corners into the top of the side posts. The end wall trusses have no collar tie and bracing. Try to lift the end wall truss from two points equally spaced from the center. This will prevent the truss frame from bending. At this time you can install the center vertical or verticals in the end wall to support the center section of the end wall truss. See your drawings for the location and parts for your building. If you are using base plates, you will be installing a PP-60 pin plate. If you are using base rails, you will be installing a starter base rail (see your drawings). Do not attach with screws until all of the trusses are installed and checked for alignment with the other trusses.

Reference information: A 40' wide end wall truss weighs 202 lbs. A 40' wide interior web truss weighs 301 lbs.

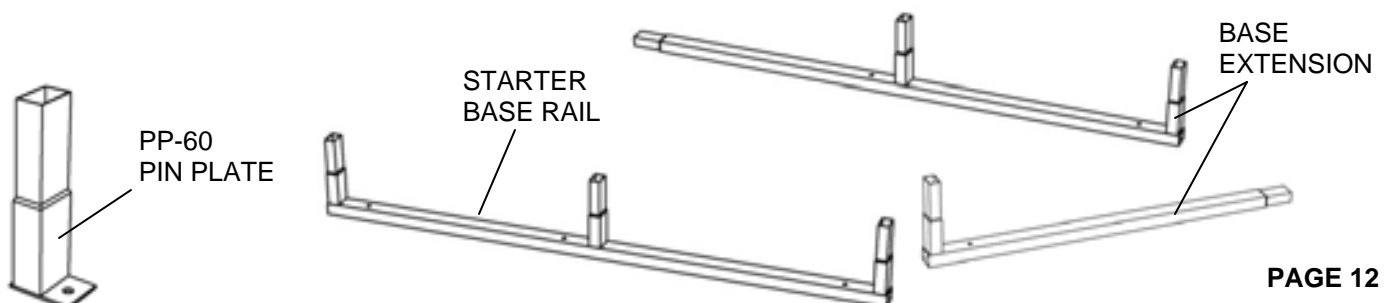


STEP 5: INSTALLING THE BACK WALL CENTER BRACE OR BRACES

Please check your drawings to see the layout of the back verticals on your building. You may or may not have a vertical in the center of the back wall. Installing the center verticals will support the truss and remove the sag that will occur in an unsupported truss.

The studs on the ends of the building are 2" x 3" tubes. If you building is over 10' at the eave you will be using height extensions (the height extension has one end swaged or reduced) with a longer vertical. The back vertical tubes will fit onto the swaged end of a base rail pin or the swaged end of a pin on a base plate.

If you are using base plates or base rails you must see your drawings for the measured layout of the pin plates or base rails. The pin plate that you will be using is VersaTube part no. PP-60. The base plate will be placed to the side of the vertical pin. The base plate can be turned to the left or right as needed. You will want to turn the plate away from walk door openings.



The illustration below is a typical end wall installation for 40' wide buildings. Please see your drawings to determine the parts and layout of the end wall on your building. Illustration A is for pin plates and illustration B is for base rails. If you have pin plates you will anchor the pin plates to the slab with 1/2" x 4 1/2" concrete wedge anchor. Base rails are anchored with 1/2" x 7" concrete wedge anchors. At this time you can install all the verticals or just the center vertical to support the truss. Attach the verticals to the peak and rafters with two 700-bk10 brackets on the inside of the building. (See next page for details). If your end wall has one or two garage doors install the verticals on both sides of the garage doors to support the truss. Repeat this assembly at the other end of the building. See your drawing package for layout.

ILLUSTRATION (A)
With Base Plates

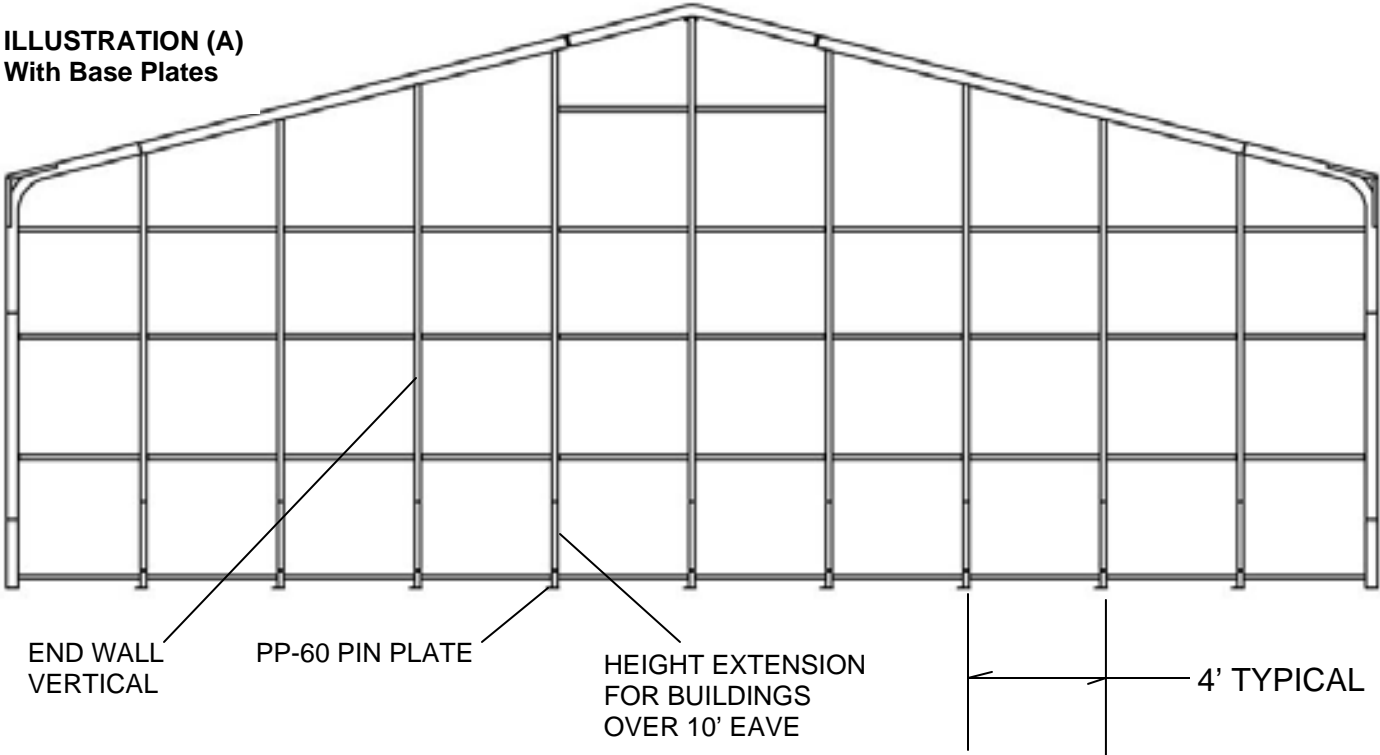
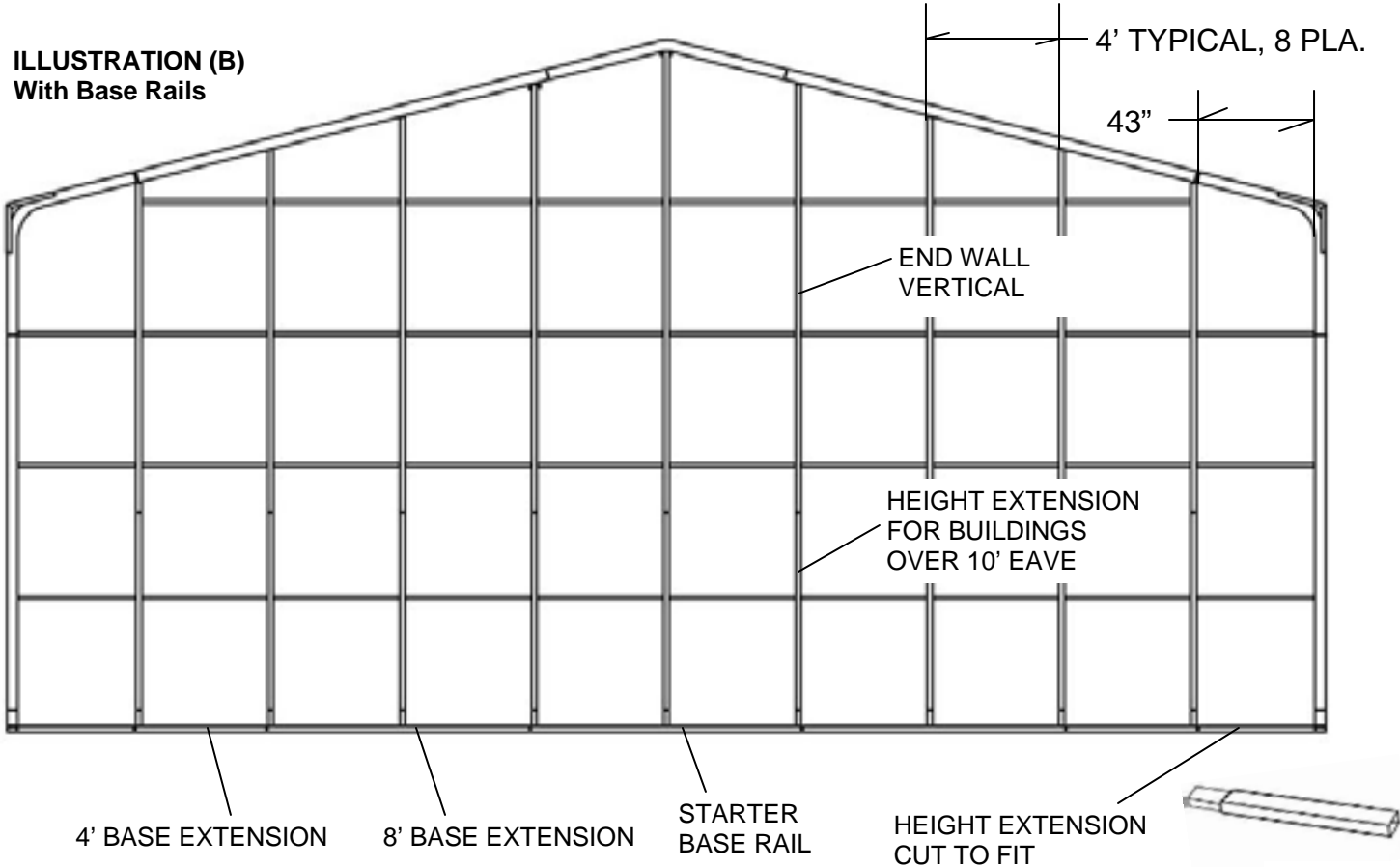
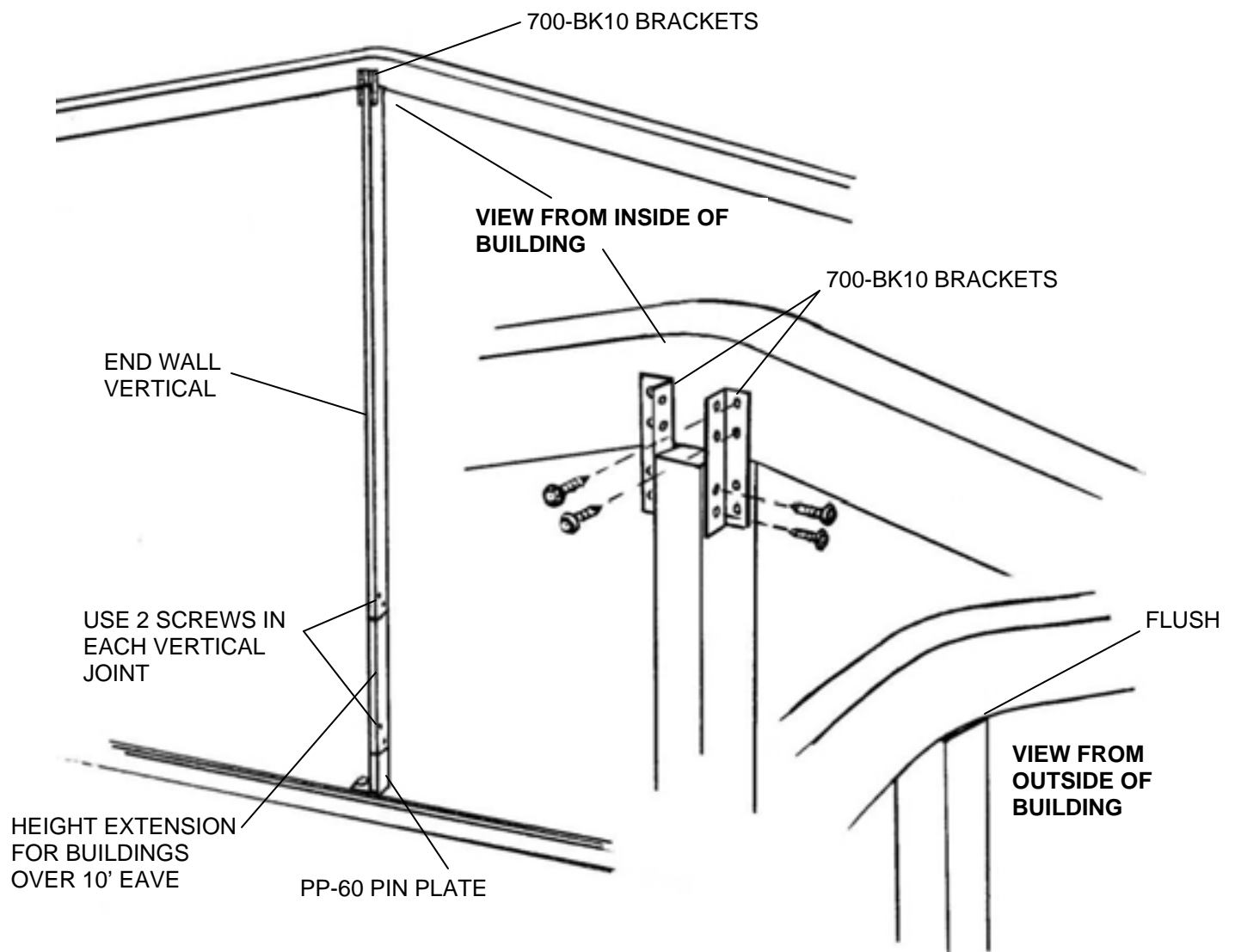


ILLUSTRATION (B)
With Base Rails

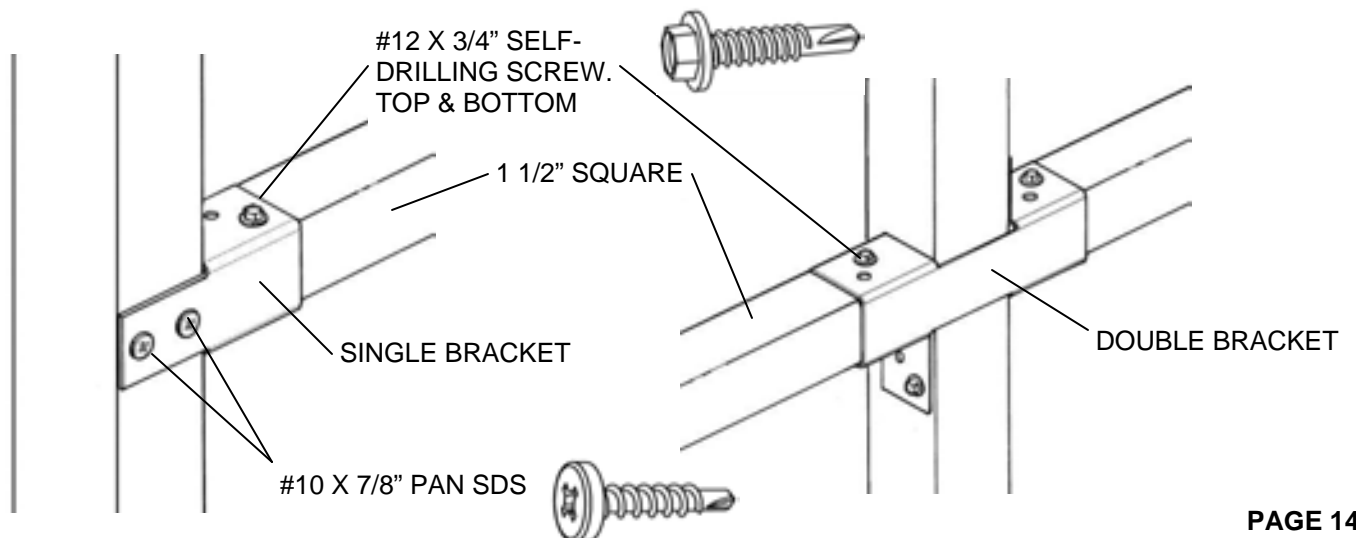


The illustration below shows a typical assembly of an end wall vertical.



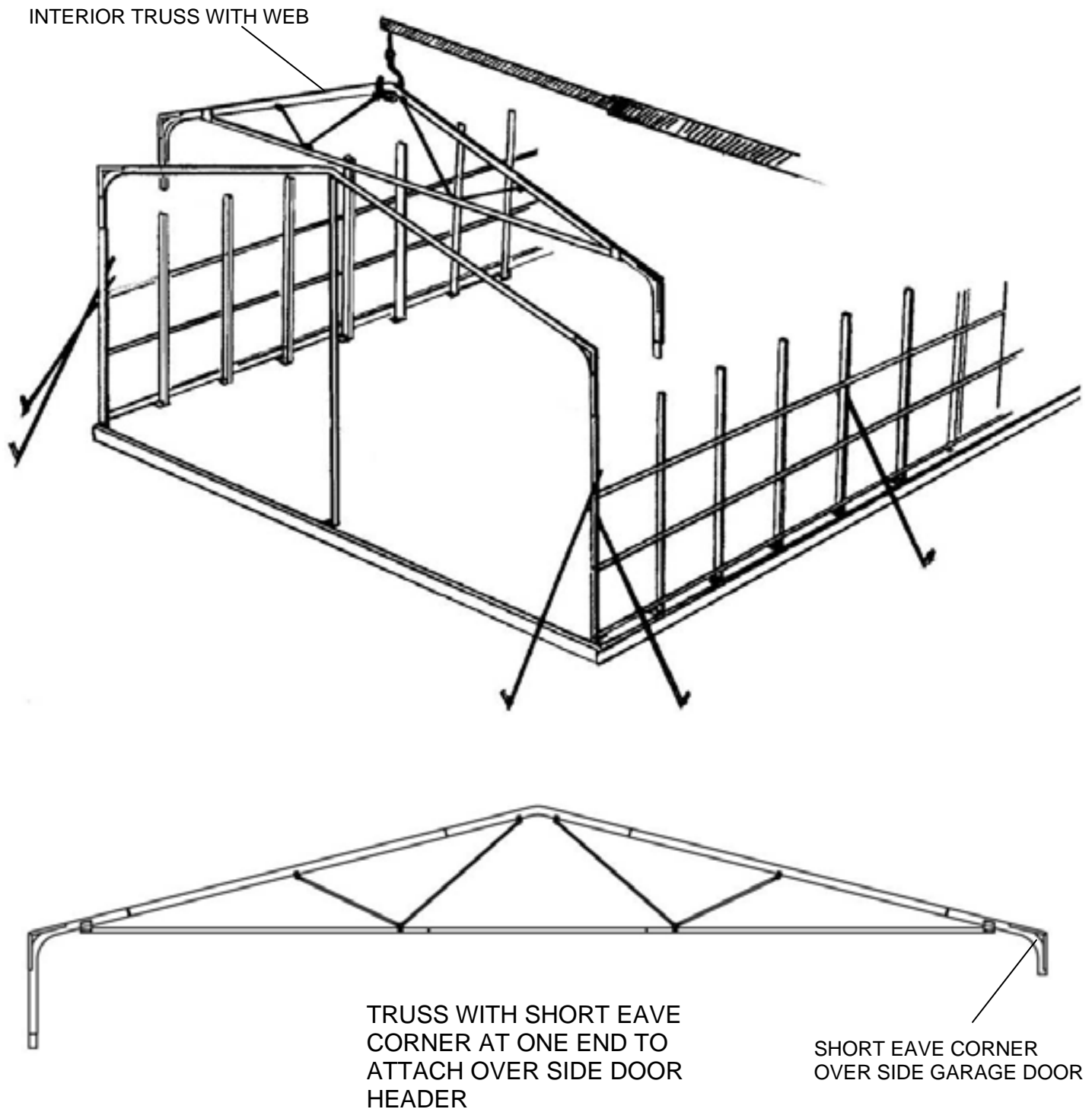
INSTALLING GIRTS IN THE END WALL

End wall girts are 1 1/2" square tubes that are flush mounted to the verticals with BK-30 single brackets and BK-31 double brackets. The girts are typically cut 1/4" shorter than the opening between verticals. Attach the single brackets with # 12 x 3/4" self-drilling screws to the girt and with #10 x 7/8" pan head, self drilling, square drive screws to the frame. Attach the double brackets to the girts and frame with #12 x 3/4" self-drilling screws (one per flange.)



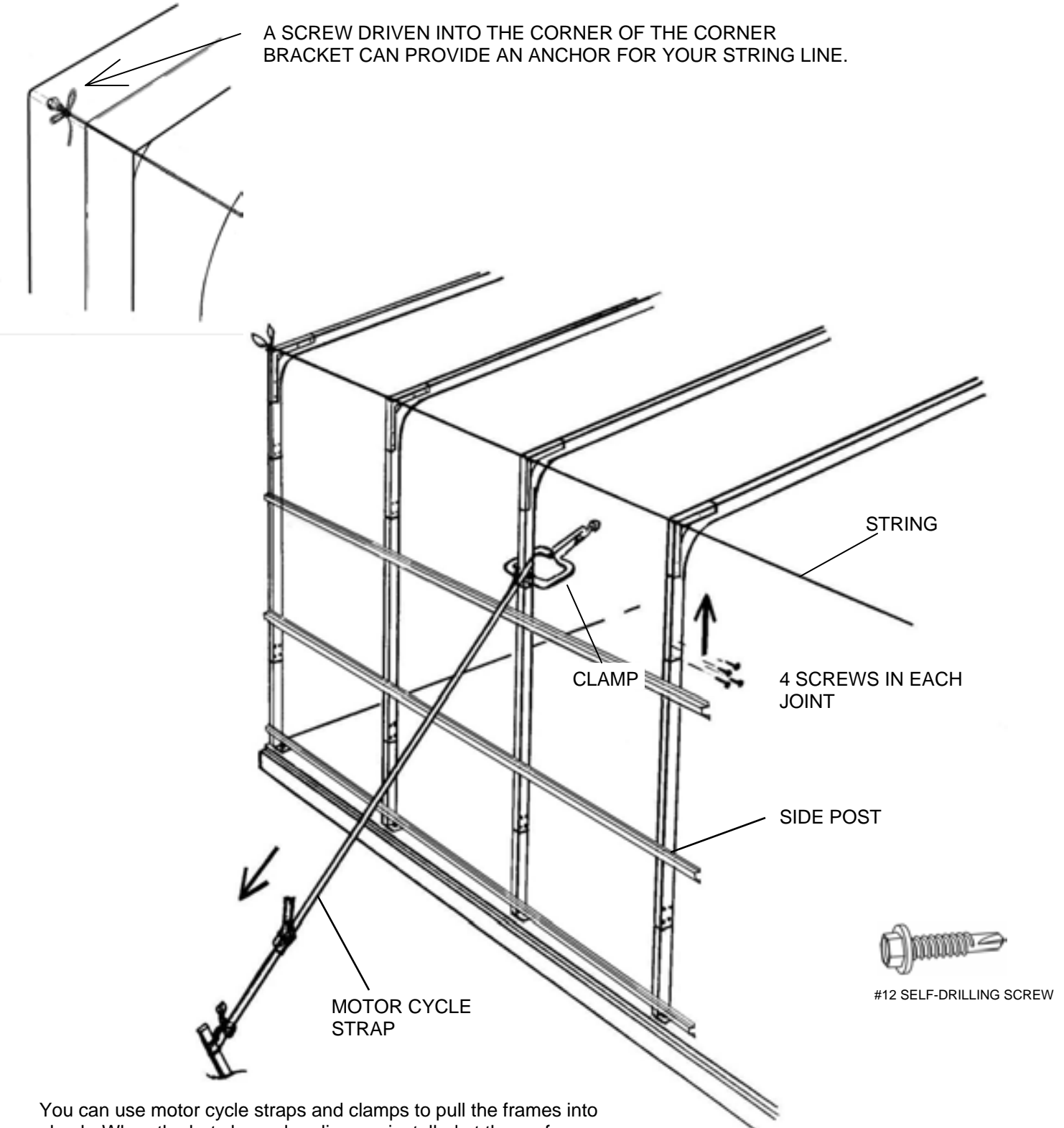
STEP 5: INSTALLING INTERIOR TRUSS SECTIONS

Using the crane or boom attachment lift a full truss assembly (truss with web braces) and insert the eave corner ends into the next side posts as shown. Repeat this for all the remaining truss sections. If you have garage doors in the side of the building the truss over those doors will be different. Over the side door the truss may have a special shorter eave corner. Do not attach the eave corners to the side post at this time with screws. (See next page)



STEP 6: CHECKING THE EAVES FOR HEIGHT AND PLUMBING THE SIDE POSTS

When all of the eave corners have been installed you must check the height of all of the eaves to make sure that they are at the same height. Run a string line down the length of the building at the eave corner. This will show you if any of the eaves are not the right height or the side posts are not plumb. Make adjustments to the truss height and the frame and install (4) #12 x 3/4" self-drilling screws in each swage joint.



You can use motor cycle straps and clamps to pull the frames into plumb. When the hat channel purlins are installed at the roof eave corner and the hat channel girt on the side at the eave the frames will be held in place.

STEP 7: INSTALLING ROOF PURLIN HAT CHANNEL AND REMAINING SIDE GIRT HAT CHANNEL

Install the first run of roof purlin hat channel at the eave corner. Place the lower edge of the channel flush with the corner of the eave corner bracket. Attach the channel to the eave corner with #12 x 3/4" self drilling screws as you did the side hat channel. Check the on center spacing of the frames as you go. Complete the first run of roof hat channel down the length of the building. Repeat this on the other side of the building. Butt hat channels together at the ends, centered on a frame.

CHECK THE SPACE
BETWEEN FRAMES
46" FOR 4' ON CENTER,
58" FOR 5' ON CENTER,
70" FOR 6' ON CENTER.

START THE END OF
THE HAT CHANNEL IN
THE CENTER OF THE
BRACKET OR 1" FROM
THE OUTSIDE EDGE.

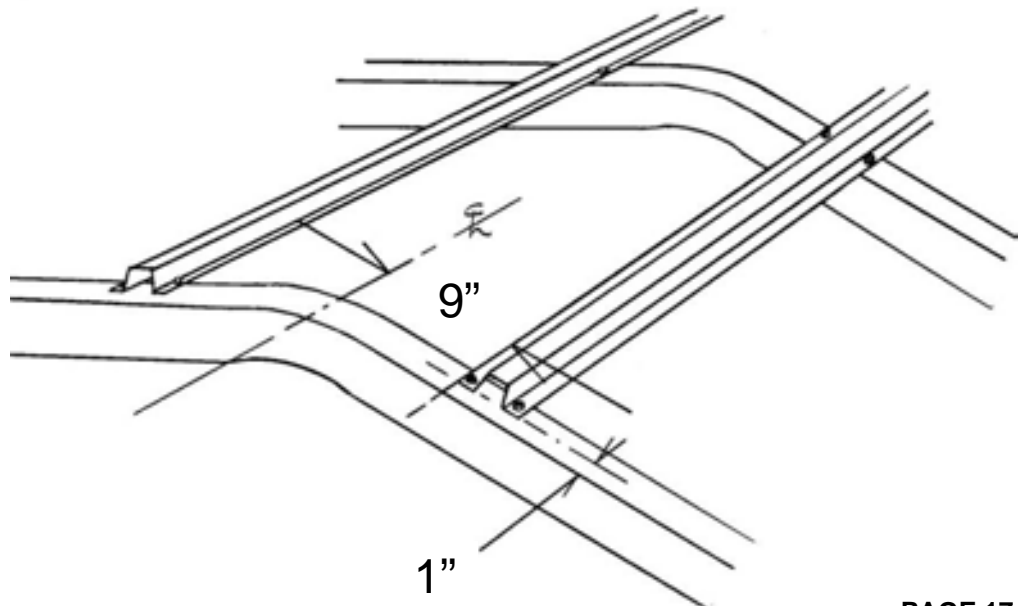
HAT CHANNEL PURLIN
FLUSH WITH EDGE OF
EAVE CORNER BRACKET

END OF HAT CHANNEL
CENTERED IN FRAME

BUTT ENDS OF HAT
CHANNEL TOGETHER
CENTERED IN FRAME

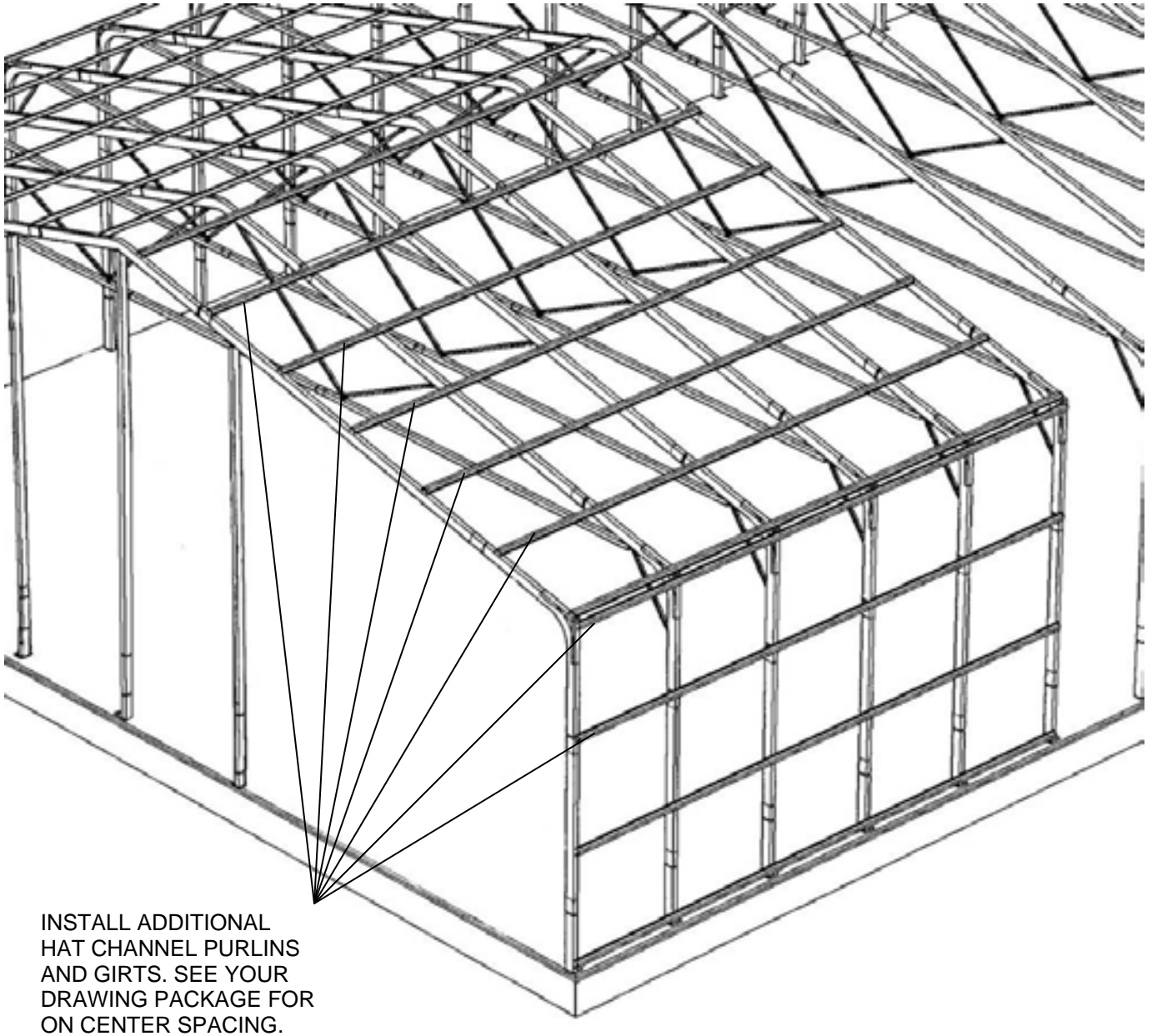
HAT CHANNEL AT THE PEAK OF THE BUILDING

After the eave hat channel purlins have been installed on both sides of the building install two runs of hat channel at the peak of the building. Locate the top edge of the hat channel 9" from the center of the peak frame member and 1" from the end of the building frame as shown at right. Be sure to measure and set the frames on 4', 5', or 6' centers as you go depending on your building.



INSTALLING THE REMAINING SIDE HAT CHANNEL GIRTS

See your drawing package side elevation to see the layout a side girts on your building. You should have at least two more runs of side girts to install.



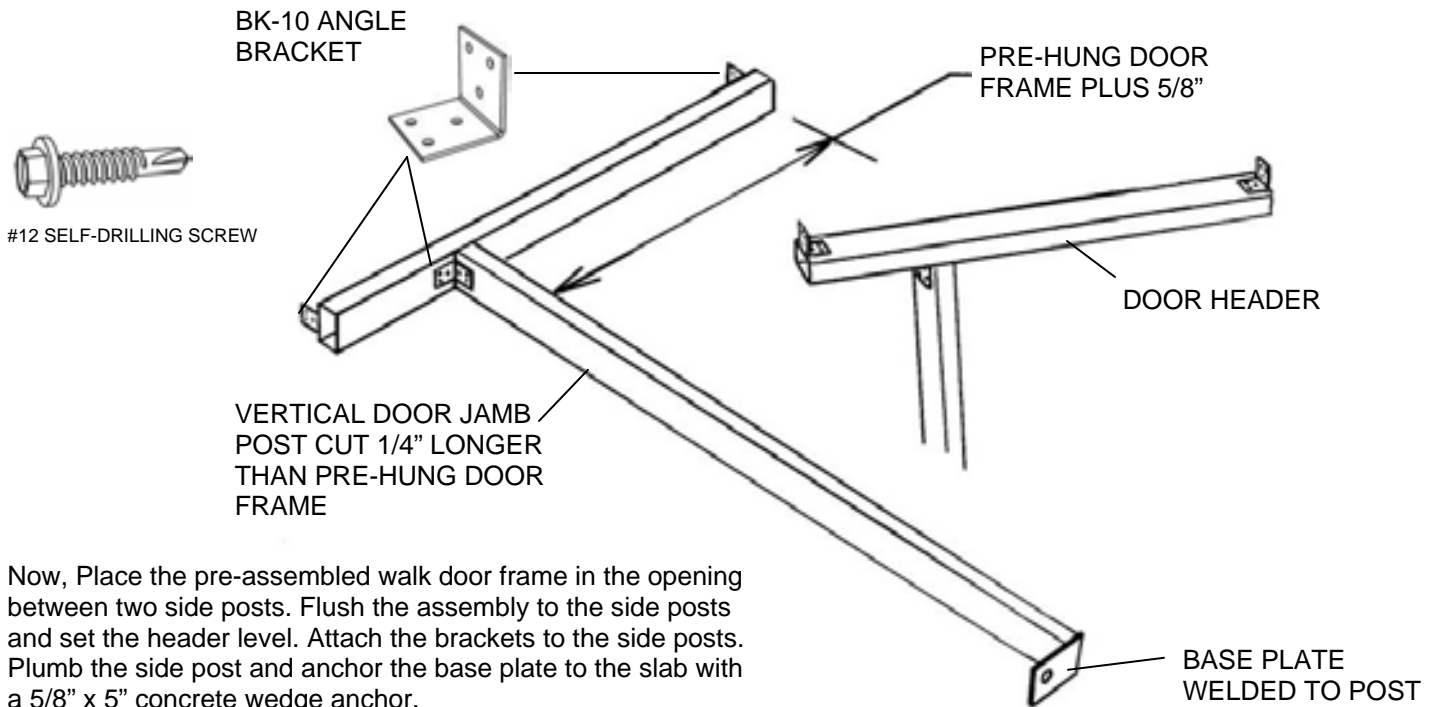
STEP 8: INSTALL THE ENCLOSURES AT BOTH ENDS OF YOUR BUILDING.

See your building drawings for parts and layout for the end walls of the building. Note that end walls are 2" x 3" tubes. See pages 14, 15 and 16.

INSTALLING A WALK DOOR FRAME IN SIDE OF BUILDING WITH BASE PLATES

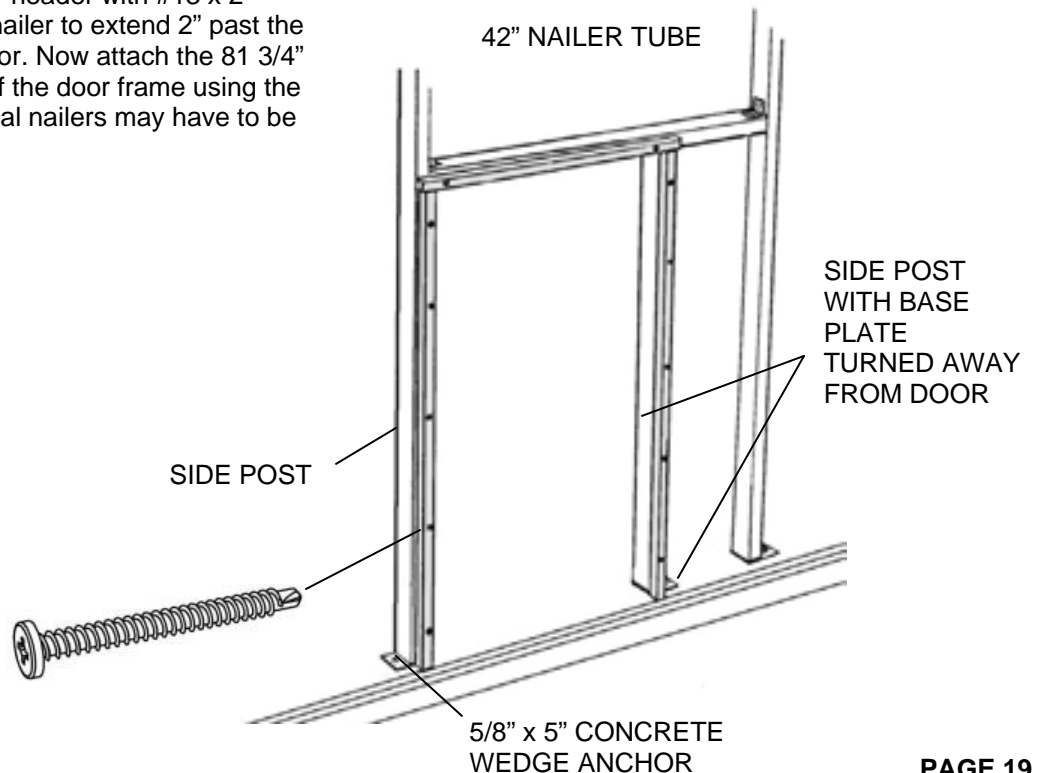
A walk door frame is typically a door header tube 2" x 4" cut to fit the space between side posts. (46", 58" or 70" long)
The door vertical is a 2" x 4" tube with a base plate welded to the bottom. This tube will be 81 3/4" for a 3068 door.

Measure the pre-hung door that you will be installing to get a rough opening size about 5/8" larger in width and 1/4" larger in height than the insert portion of the pre-hung door. Measure and mark the location of the vertical jamb post on the slab. (Note that the base plates extend 1/4" from each post. The measurement given is from post to post not base plate to base plate.) You may have to cut down the door jamb post to fit your walk door frame. Pre-assemble the door jamb post to the door header with BK-10 angle brackets and #12 x 3/4" self-drilling screws as shown below.



Now, Place the pre-assembled walk door frame in the opening between two side posts. Flush the assembly to the side posts and set the header level. Attach the brackets to the side posts. Plumb the side post and anchor the base plate to the slab with a 5/8" x 5" concrete wedge anchor.

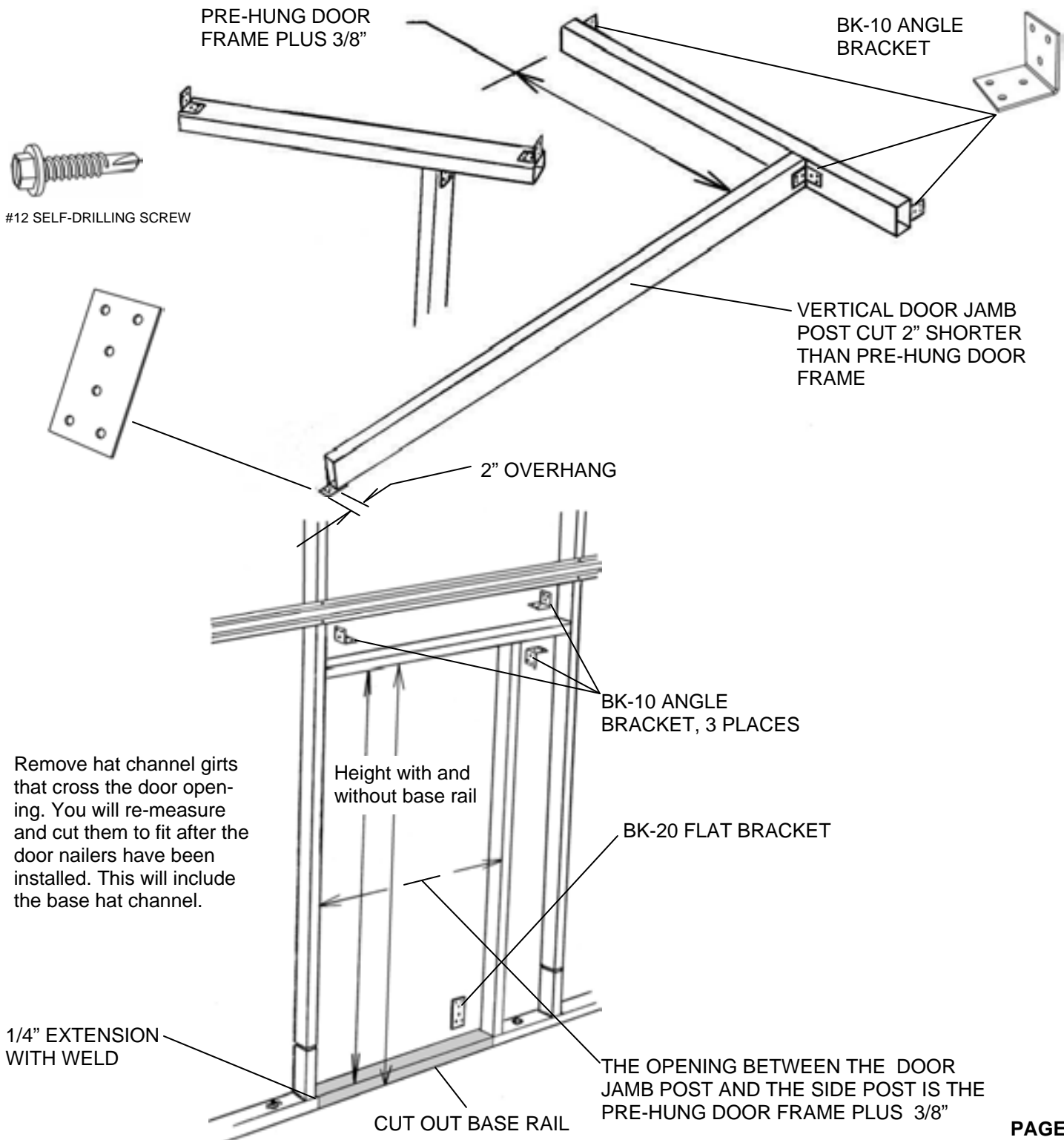
You will now frame around the door opening with 1 1/2" square nailer tubes. Your kit will have (1) 42" long tube with 2 holes and (2) 81 3/4" long tubes with 5 holes. Attach 42" nailer tube flush with the bottom of the door header with #13 x 2" concealor screws (black). Allow the nailer to extend 2" past the door opening on both sides of the door. Now attach the 81 3/4" vertical nailers flush with the inside of the door frame using the same screws, 5 per nailer. The vertical nailers may have to be trimmed to fit.



INSTALLING A WALK DOOR FRAME IN SIDE OF BUILDING WITH BASE RAILS

We recommend that you cut out the base rail where walk doors will be located. Cut out a section of base rail wide enough to fit your pre-hung door frame into the opening (frame width + $3/8"$). Measure the height of your pre-hung door frame and cut a vertical door jamb post 2" shorter than the door frame height. This post will be mounted on top of the base rail and to the bottom of the door header. (You should have a 2" x 4" x 81 $3/4"$ from which to cut this door jamb post) In your kit you will have a door header 2" x 4" x 46", 58" or 70" depending on the on center spacing of your side posts.

Pre assemble these components as shown below and place them in the chosen space between to side posts. The door frame assembly should be flush with the building frame. The header will be attached to the side posts with BK-10 angle brackets and the bottom of the vertical door jamb post will be attached to the inside of the base rail with a BK-20 flat bracket. Make sure the door jamb post is flush and plumb. Use #12 x $3/4"$ self-drilling screws.

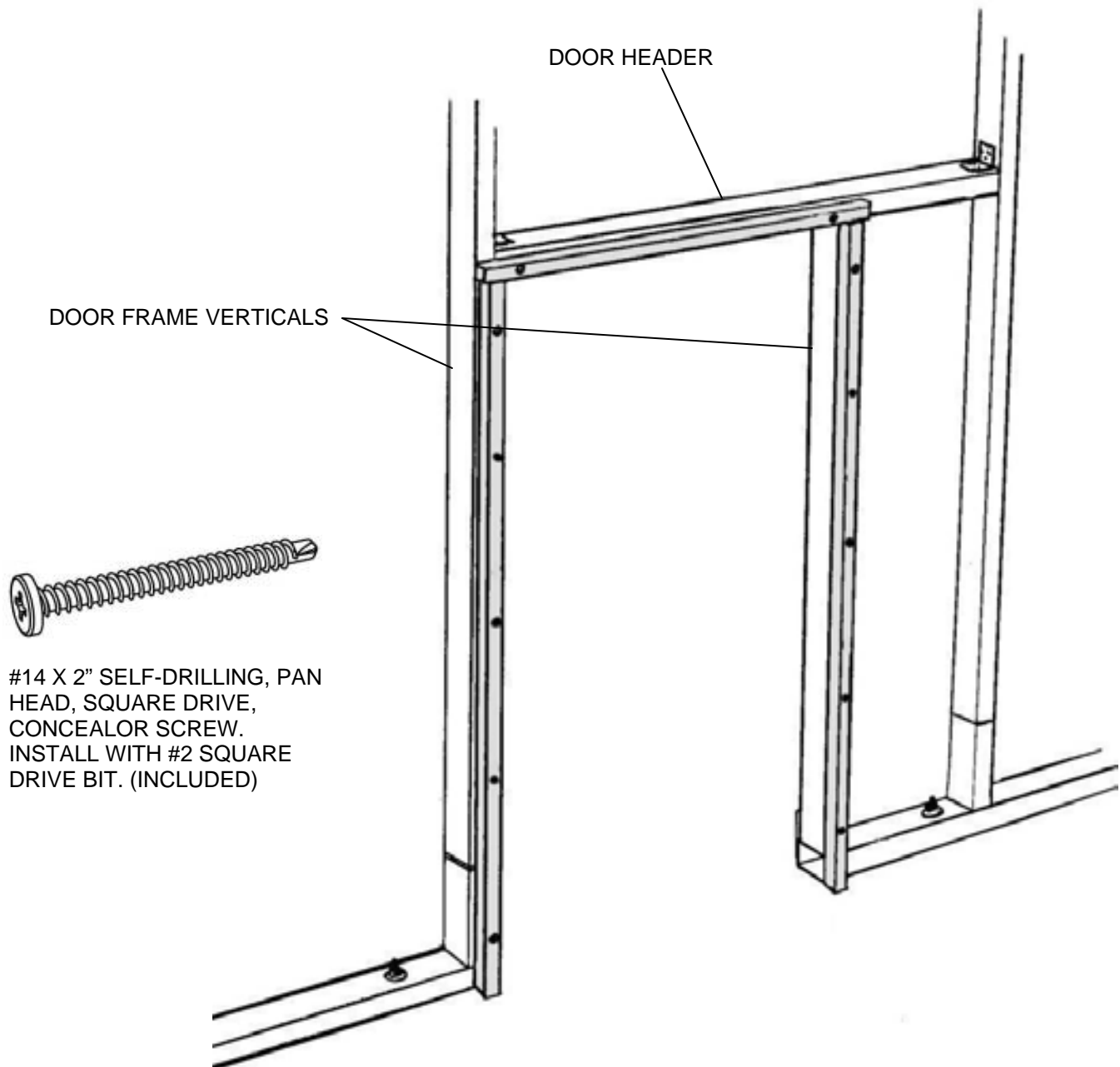


INSTALLING A WALK DOOR FRAME IN SIDE OF BUILDING WITH BASE RAILS CONTINUED

INSTALLING NAILER TUBES AROUND DOOR FRAME:

In your kit you will find (1) nailer tube 1 1/2" square x 42" long with two holes. This will be attached to the door header. You will also have (2) nailer tubes 1 1/2" square x 81 3/4" long with 5 holes. These will attach to the verticals that make up the door frame. Attach the door nailer tubes to the door frame with #14 x 2" self-drilling, pan head, square drive, concealor screws (shown below left).

Install the vertical nailers first. The vertical nailers will extend from the slab to the bottom of the header tube. If you need to cut the tube to fit, do that at this time. The vertical nailers should be flush with the inside of the door frame. Attach with 5 screws per nailer. Now install the 42" nailer to the door header. This nailer should sit on top of the vertical nailers. Use two screws to attach the nailer.

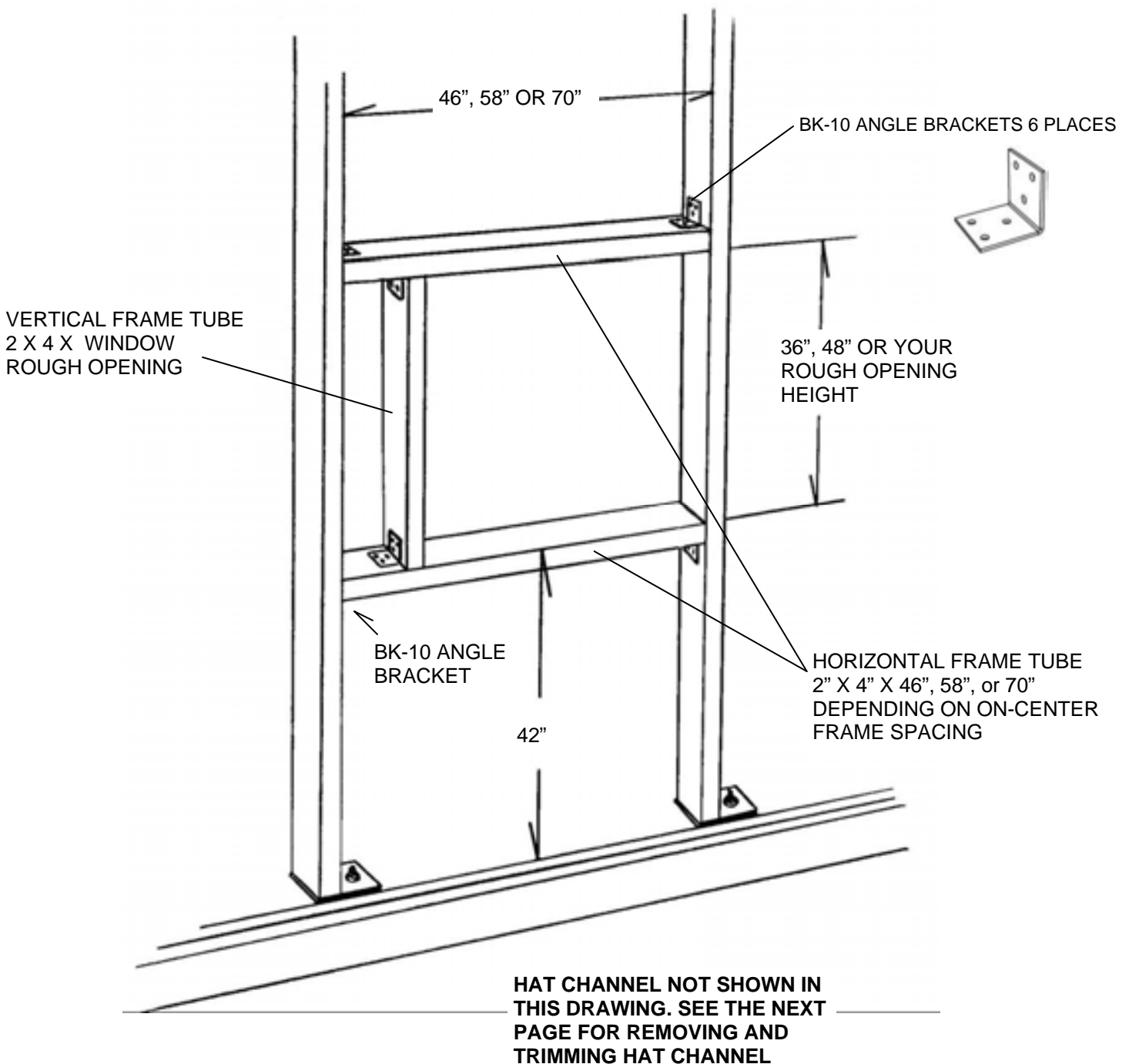


INSTALLING A WINDOW FRAME IN SIDE OF BUILDING

The window frame is two horizontal frame tubes 2" x 4" x 46", 58" or 70" and one vertical tube 2" x 4" x window height (typically 24", 36" 48" or 60"). Also included in a window kit, if you purchased the kit, are 1 1/2" square nailer tubes used to frame out the window to the height of the hat channel girts. The nailers normally will have 1/4" holes pre-drilled in the tubes. The horizontal nailers will be 4" longer than the window width. The vertical nailers will be the same height as the window frame vertical. The window frame tubes are attached to the building side posts and to each other with BK-10 angle brackets and #12 x 3/4" self-drilling screws. You may want to pre-assemble brackets to the components prior to attaching them to the building frame. The 42" dimension from the slab to the window sill is typical. Keep the frame square and level as you attach the brackets.

See the next page for installation of the nailer tubes.

Note: Window frames in the end walls of the building are the same as the side walls except the end walls use 2" x 3" tubing. In the end wall with flush mounted girts the nailer tubes are not required.

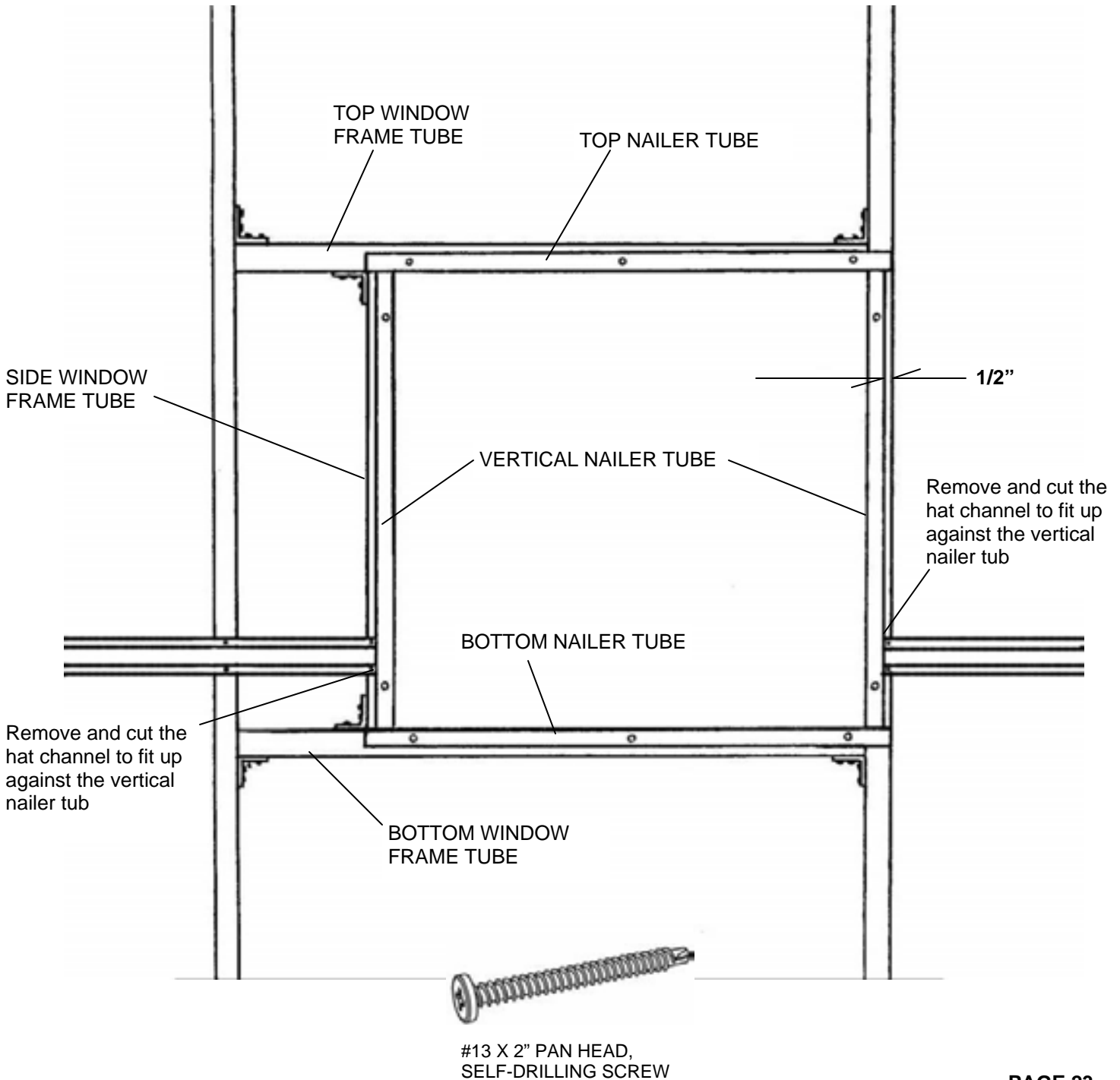


INSTALLING NAILER TUBES AROUND WINDOW FRAME

The front face of the window frames must be framed out to be flush with the flat surfaces of the hat channel. This will be accomplished by framing the window with 1 1/2" square nailer tubes. The horizontal nailer tubes for the top and bottom of the window frame are the window width plus 4" with pre-drilled mounting holes. The vertical nailer tubes are height of the vertical window frame with pre-drilled mounting holes.

Install the bottom tube first flush with the top of the bottom window frame tube and centered on the frame. Install the vertical nailer tubes flush with the insides of the window frame and the top tube centered and flush with the bottom of the top window frame tube. See illustration. Use #13 x 2" pan head, self-drilling, square drive screws to fasten the nailer tubes to the window frame. The screws are included if you purchased a window kit.

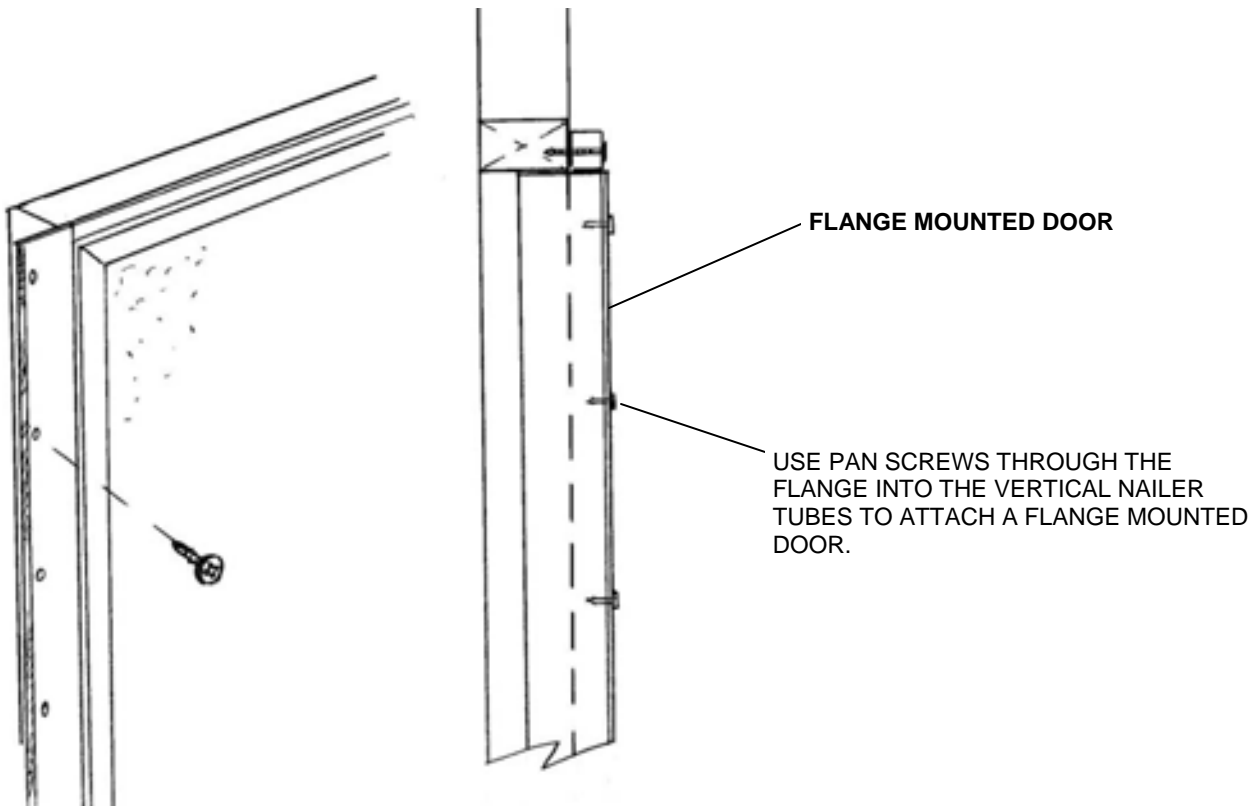
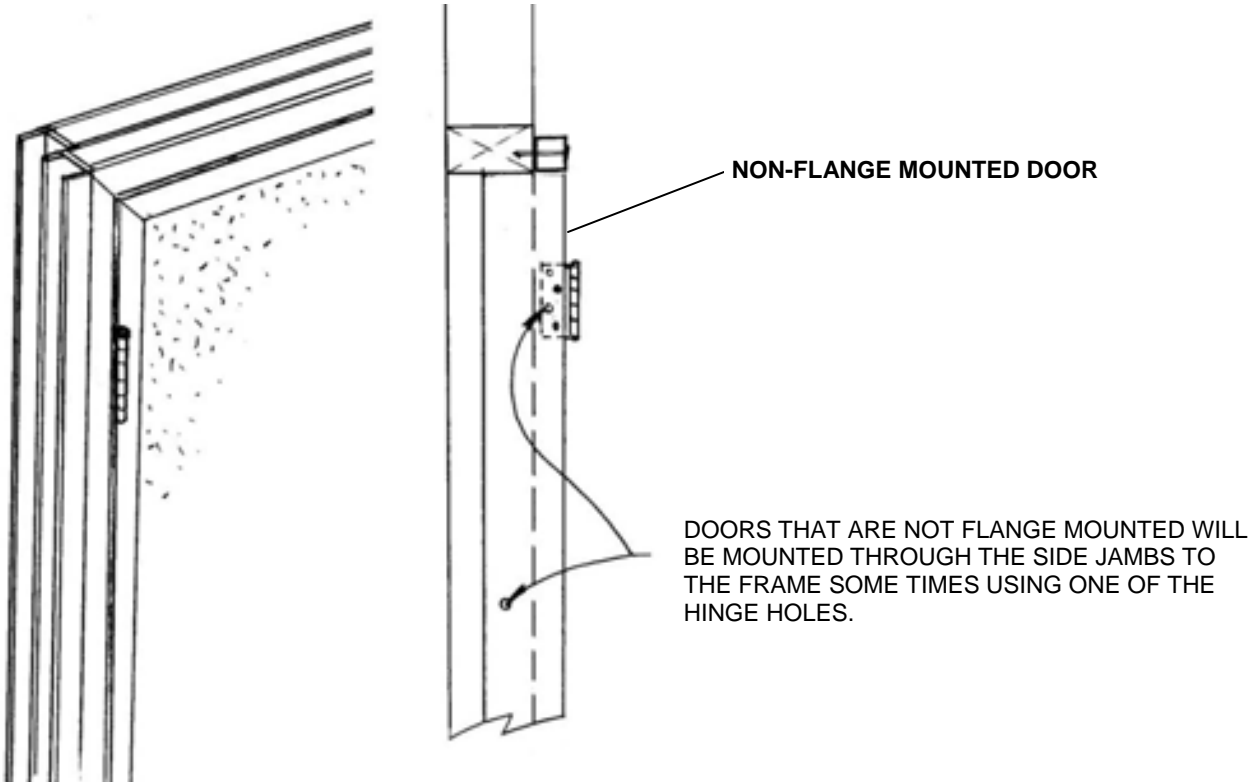
If a run of hat channel crosses the window opening you will have to measure, mark and remove the hat channel. Cut the piece out that crossed the window and reinstall the hat channel. The ends of the hat channel will butt up to the 1 1/2" nailer tubes. Attach the ends of the hat channel to the window frame and side post.



INSTALLING THE WALK DOOR

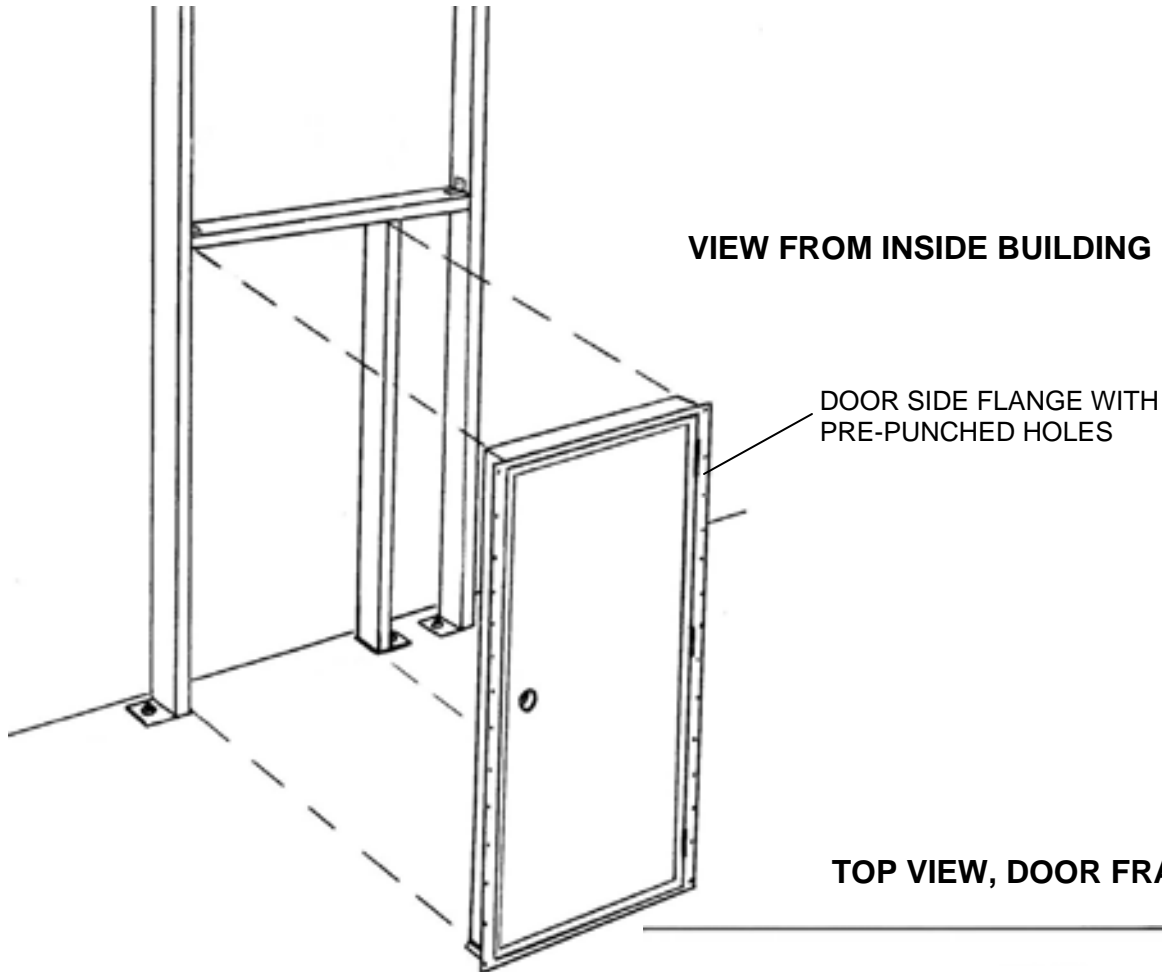
Pre-hung walk doors are typically attached to the frame with screws through the door jamb into the building frame on both sides. Some doors are flange mounted on the face of the door frame to the building with pan head screws and some doors are a combination of the two. Place your door in the opening with the front edge of the door flush or touching the outside of the nailer tubes and attach the door to the frame according to door manufactures instructions. If you want to use screws provides by the door manufacturer you will have to drill pilot holes in the frame for the screws. If the door is flange mounted use #10 x 7/8" pan head self-drilling screws to attach the flange to the nailer tubes.

To prevent the door frame from warping you may want to use wood shims to fill gaps between the door frame and the building ruff in frame. Shims should be installed from the inside and outside of the building.

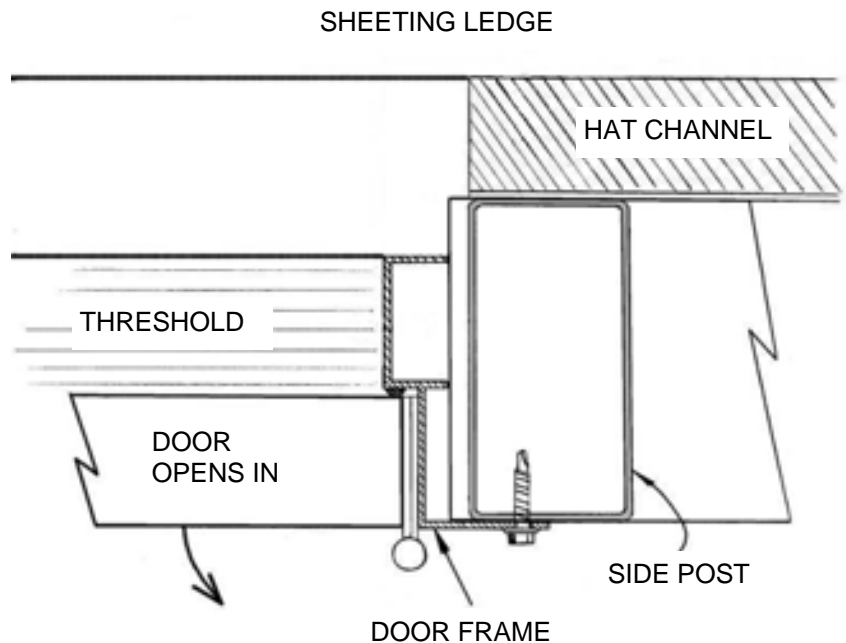


INSTALLING A VERSATUBE WALK DOOR INTO A 2" X 4" BUILDING FRAME from the inside.

These instructions apply only to the VersaTube flange mounted walk door. Any pre-hung walk door can be mounted into the frame. Most doors mount with screws through the door frame into the sides of the building frame. The VersaTube door is attached to the frame from the inside on the building with #12 x 3/4" self-drilling screws through flanges at both sides of the door. Insert the door into the opening from the inside of the building (the door will open inward), center the door, check the door for plumb and attach the door to the frame with screws in every other pre-punched screw hole. You may want to run a bead of caulk along the outside edge of the door threshold to prevent any water from coming into the building. Install door hardware.



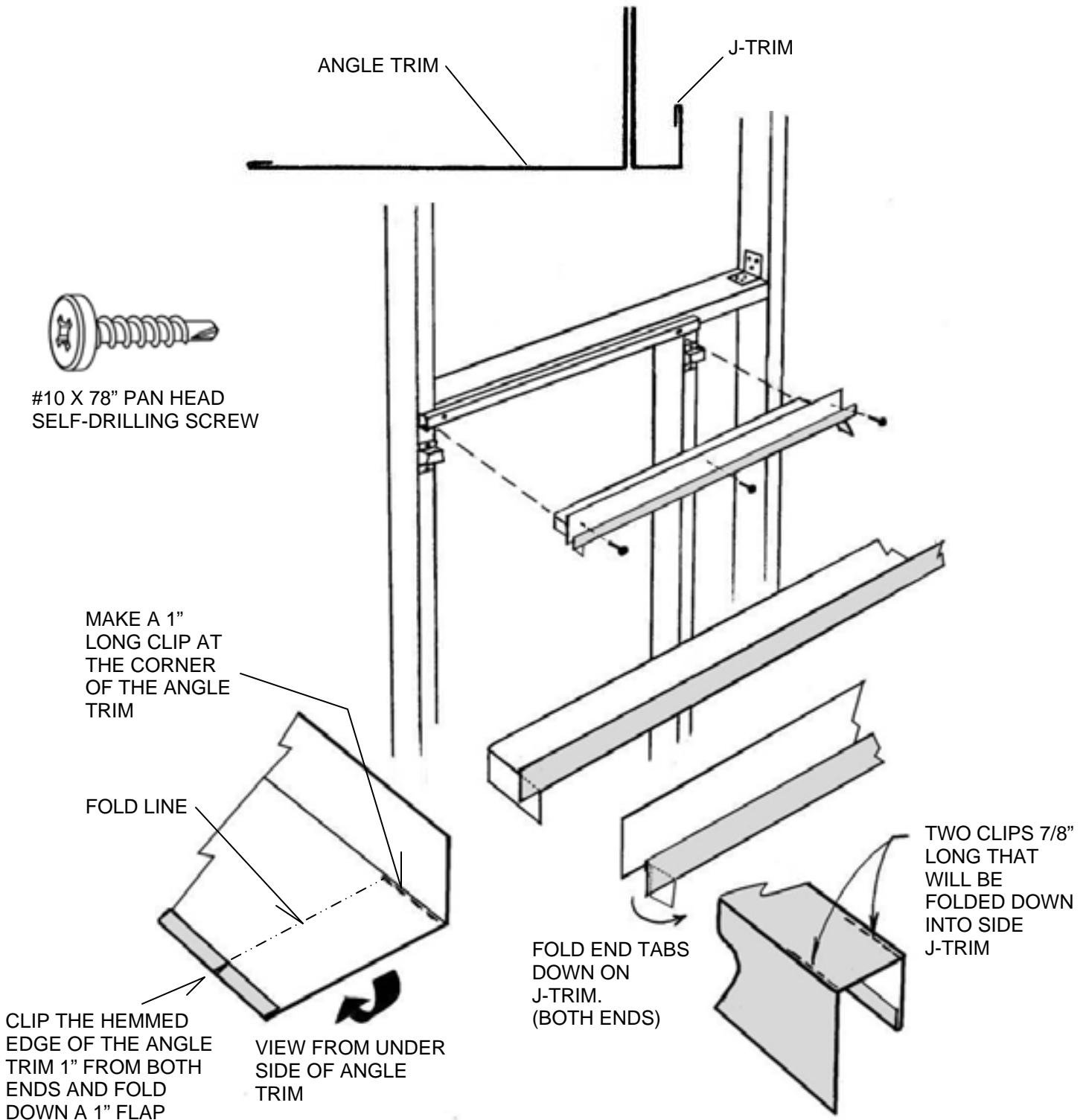
TOP VIEW, DOOR FRAME TO POST



INSTALLING TRIM AROUND THE VERSATUBE DOOR INSTALLED FROM THE INSIDE OF THE BUILDING

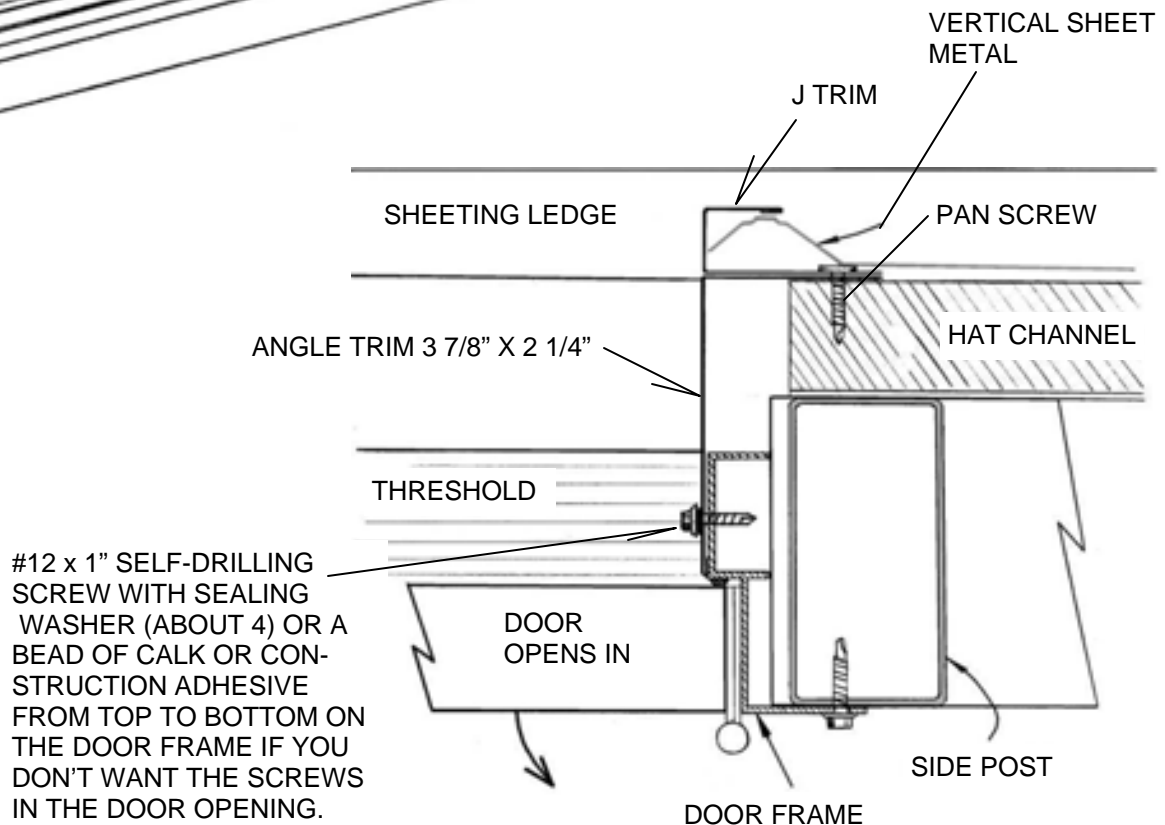
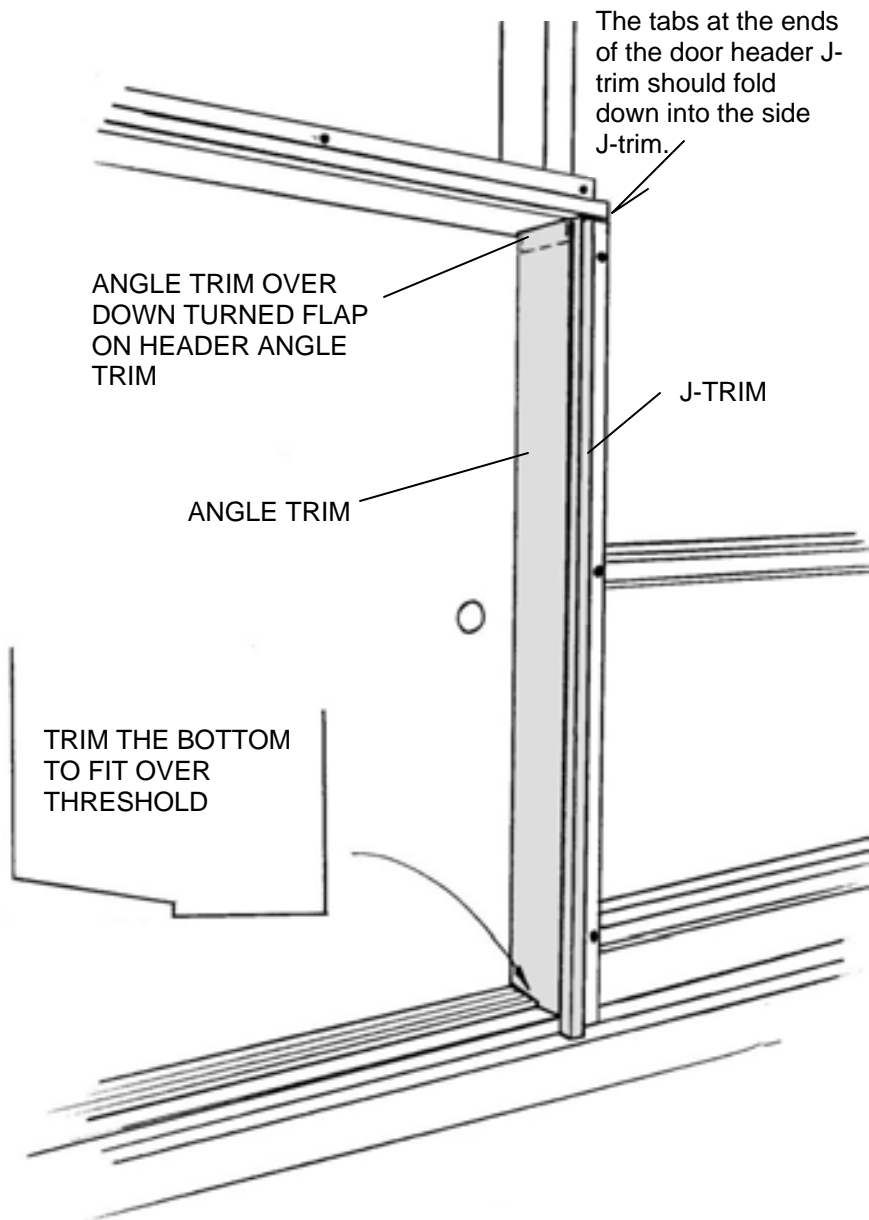
There are two types of trim used to trim around the walk door. J-Trim and Angle Trim 3 7/8" x 2 1/4".

Install the angle trim and the J-trim at the top of the door frame first. Cut a piece of angle trim 37 3/8" long. Cut a piece of J-trim 37 3/8" long. Make two 7/8" long cuts in the J-trim at the ends as shown to create flaps that will fold down into the side J-trim when it is installed. Make one 1" long clip in the corner of the angle trim at both ends and a clip in the hemmed edge 1" from the ends. Fold down a 1" flap at both ends of the angle trim as shown below. Place the angle trim and the J-trim together with the J-trim extending 1" past the folded ends of the angle trim on both sides. Insert the two trim pieces under the bottom edge of the header tube and nailer tube and attach them to the nailer tube with Three #10 x 7/8" pan head, self-drilling screws. The folded down ends of the angle trim and J-trim will fit down behind and into the angle and J-trim that you will install on the sides of the door frame.



INSTALLING WALK DOOR SIDE TRIM (ANGLE AND J-TRIM)

Use the same angle trim and J-trim for the sides of the walk door as you just installed under the door header. Cut two pieces of angle trim 80 1/4" long. This should be the distance from the under side of the header to the slab. Clip the bottom of the angle trim to fit over the door threshold as shown. Now, cut a piece of J-trim to fit from the bottom of the J-trim over the door to the slab or down into the sheeting ledge if you have a sheeting ledge. If you do not want screws in the door opening, run a bead of calk or construction adhesive from top to bottom on the door frame to hold down the wide portion of the angle trim. Set the angle trim in place and set the J-trim in place flush with the angle attach the two pieces of trim to the hat channel at the same time with #10 x 7/8" pan head, self-drilling screws. Keep the trim square and flush as you go. If you did not use calk or construction adhesive to hold down the wide portion of the angle trim you can secure the trim to the door frame with painted self-drilling screws with sealing washers (about 4 screws). Repeat these steps for the other side of the door.



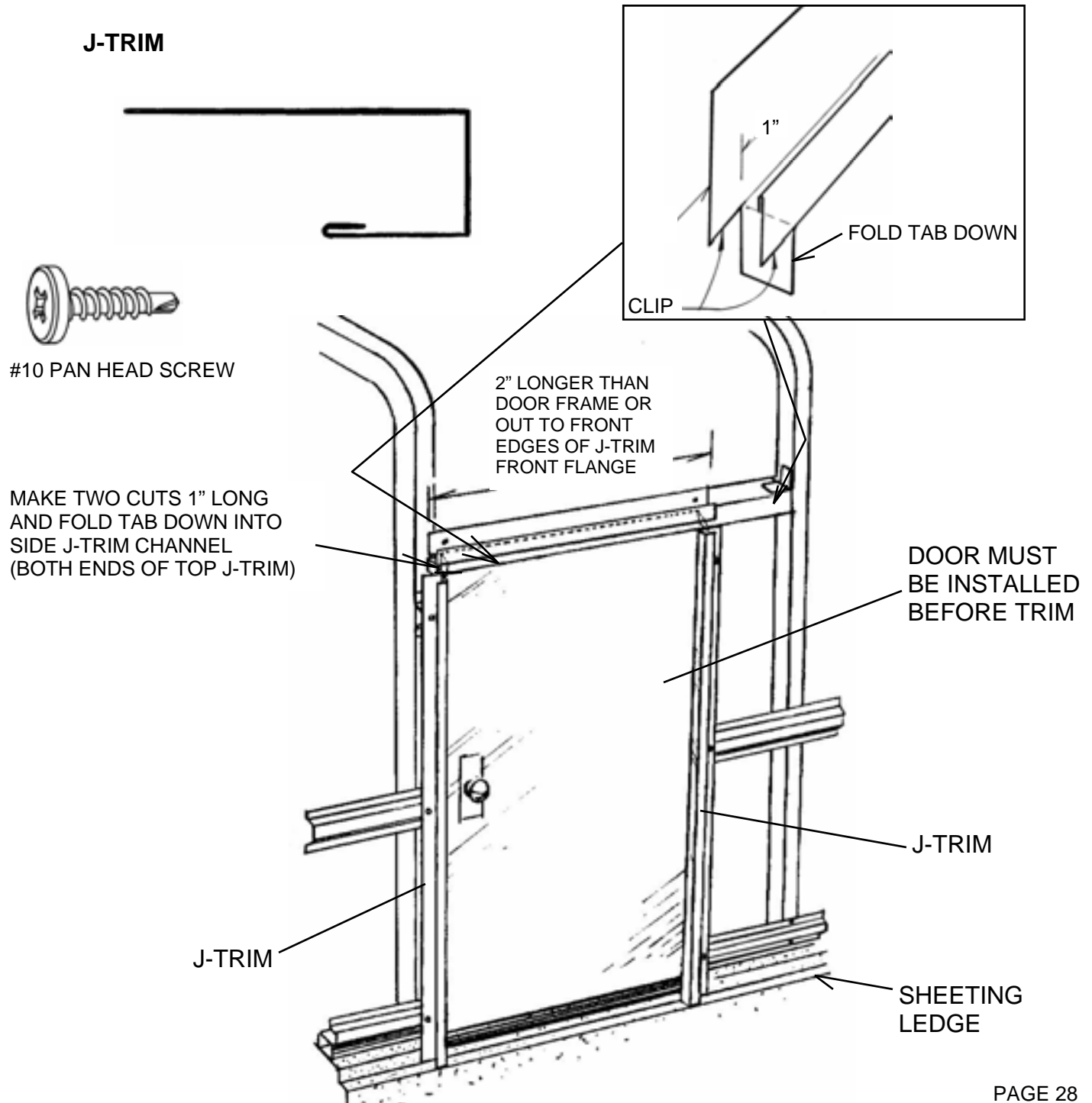
INSTALLATION OF SIDE WALK DOOR TRIM (J-TRIM)

If door J-Trim is not built in to your door install it at this time.

Cut two pieces of Side J-Trim to fit from the bottom of the sheeting ledge on the slab to the top of the door frame. Cut one piece of Top J-Trim 2" longer than the door frame. (Note that this piece of J-Trim will extend out beyond the door frame to the ends of the Side J-Trim front flange on both sides of the door. You may want to place the Side J-Trim on both sides of the door frame and take a measurement to check that distance before you cut the Top J-Trim.)

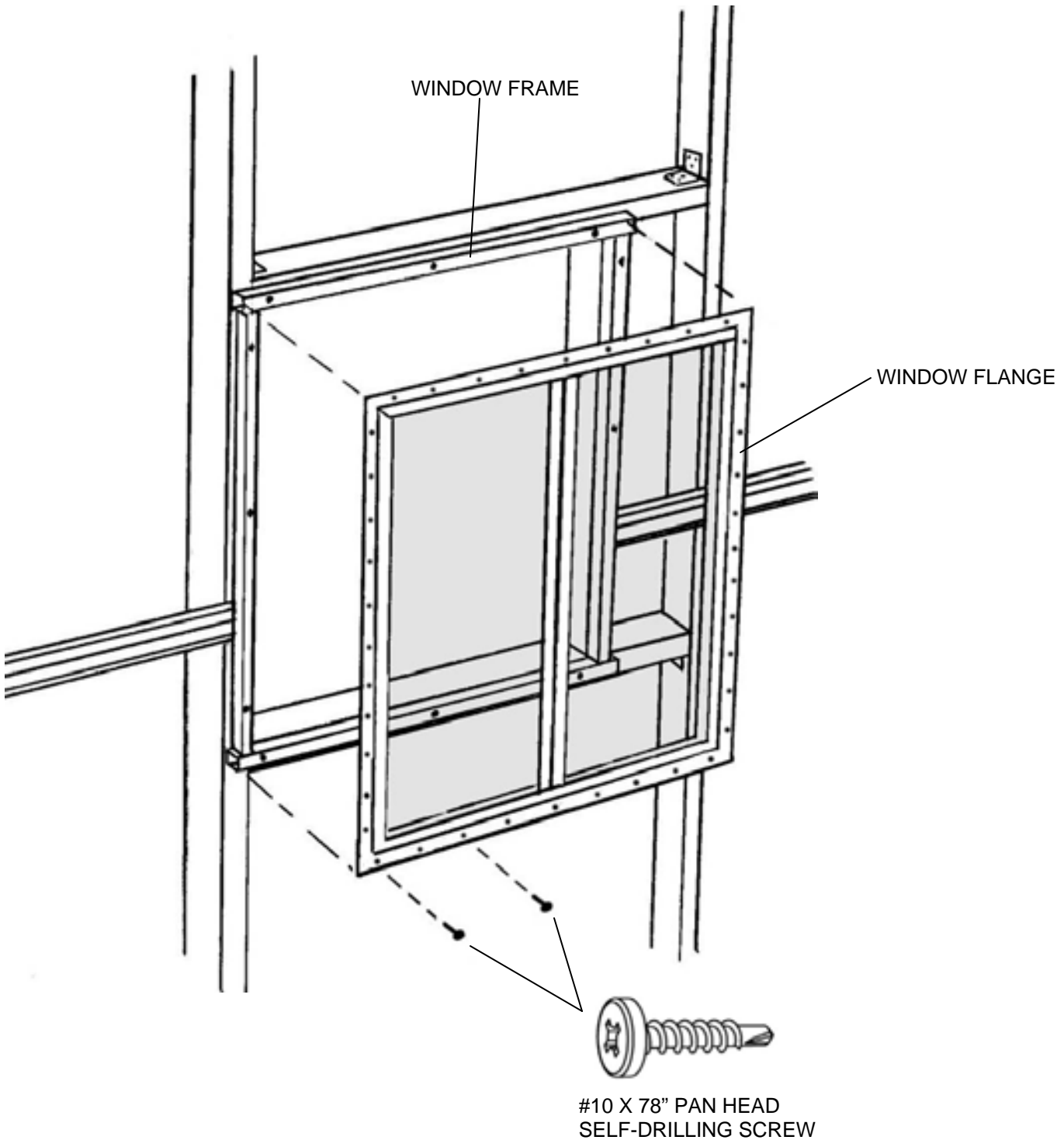
Attach the Side J-Trim on both sides of the door to the vertical nailers with Pan Head Self-Drilling Screws.

Clip two 1" long slits in the ends of the Top J-Trim as shown below. (Both ends of the Top J-Trim) Now, Place the Top J-Trim on top of the Side J-Trim over the door and fold the tabs that you created at the ends of the Top J-Trim down into the top of the Side J-Trim. Attach the Top J-Trim at both ends to the top nailer with Pan Head Screws.



INSTALLING WINDOW

The windows available from VersaTube are sliders, vertical or horizontal. The windows are aluminum and are flange mounted. The windows do not have a built in J-trim. Slide the window into the framed opening and attach the window to the frame with #10x7/8" pan head, square drive, self-drilling screws. Install screws in every other mounting hole in the window flange. The window will be square and level if your frame is square and level. If the frame is not level you may need to insert wood shims to level the window before installing screws.



INSTALLING J-TRIM AROUND WINDOW

Cut a piece of Bottom J-Trim 2" longer than the window width. Center it along the bottom of the window and fasten it at both ends with Pan Head Self-Drilling Screws. Be careful not to hit the heads of the screws used to mount the window.

Cut two pieces of Side J-Trim to fit from the top of the bottom J-Trim that you just installed to the top of the window. Fasten both pieces of side J-Trim at both ends with Pan Head Screws.

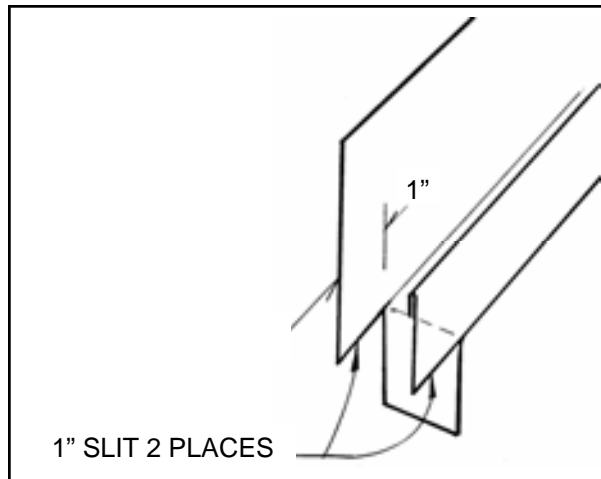
Cut one piece of J-Trim to fit from the outside edge of the front flange on one side J-Trim to the other. The distance will be about 2" longer than the window frame. Now, clip two 1" long slits in both ends of the Top J-Trim as shown below. Place the Top J-Trim on top of the Side J-Trim and fold the end tabs that you created down into the Side J-Trim channels. Fasten the Top J-Trim at both ends with Pan Head Screws.

J-TRIM

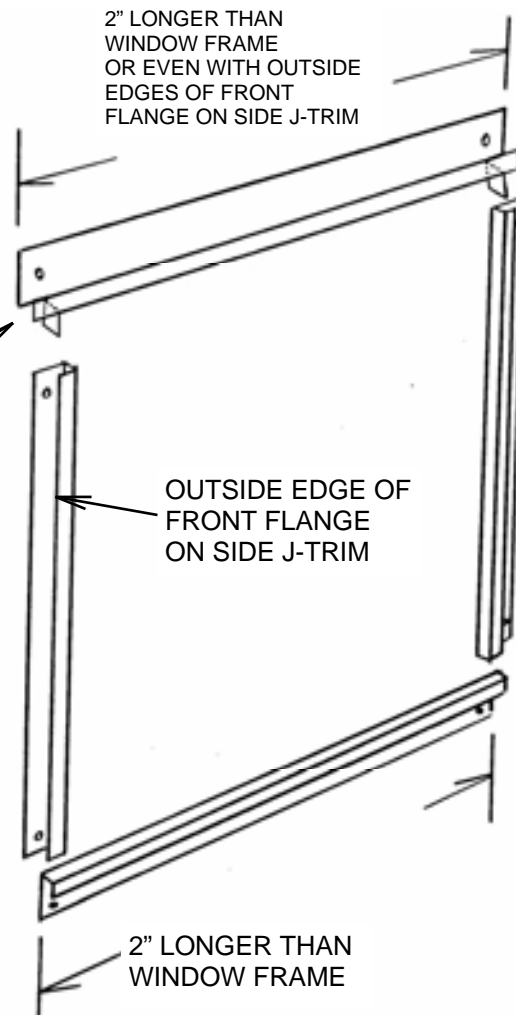


#10 PAN HEAD SCREW

NOTE: WINDOW MUST BE
INSTALLED BEFORE
WINDOW TRIM



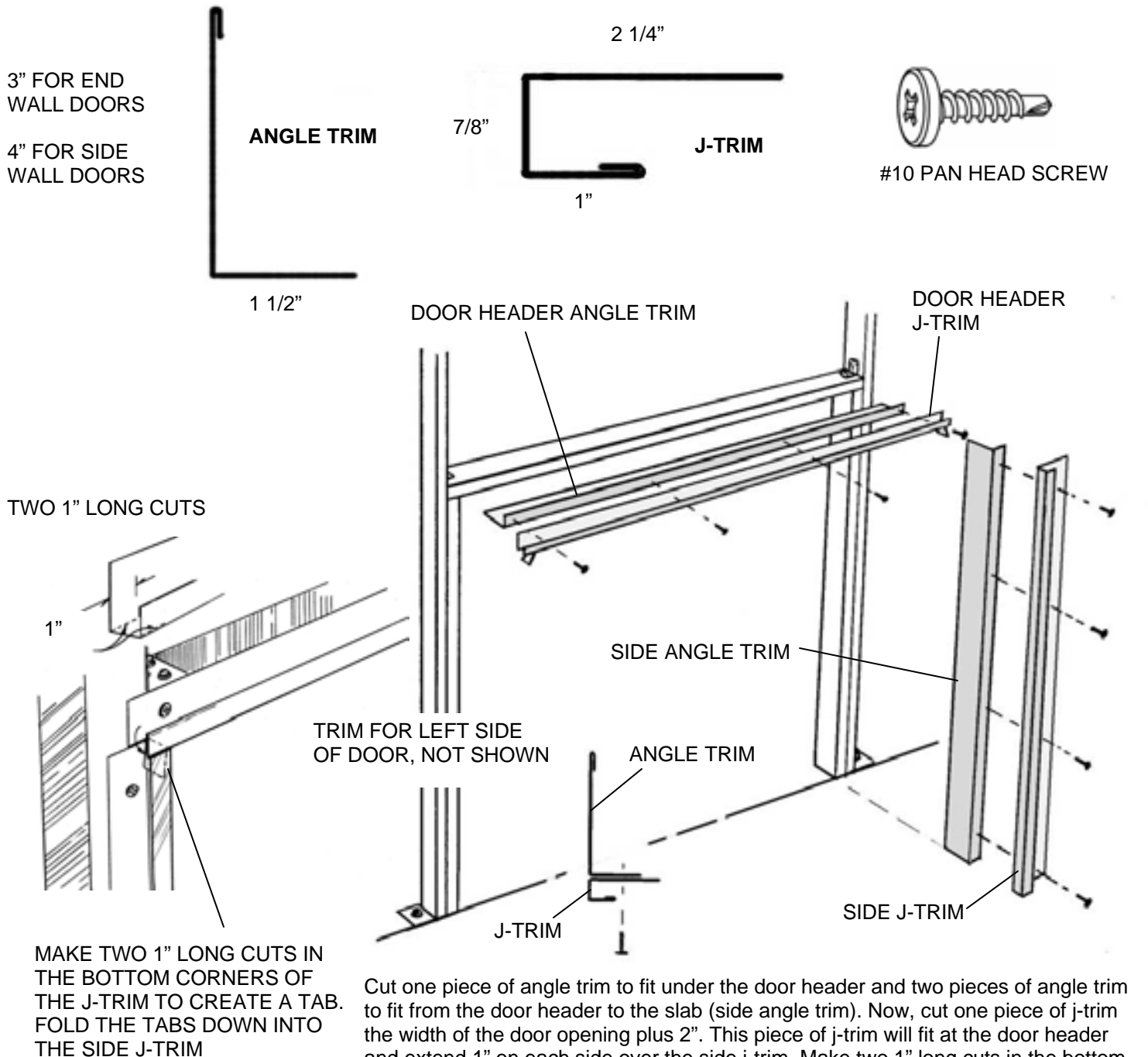
MAKE TWO CUTS 1" LONG
AND FOLD TAB DOWN INTO
SIDE J-TRIM CHANNEL
(BOTH ENDS OF TOP J-TRIM)



INSTALLING TRIM AROUND END GARAGE DOORS

To trim the garage doors you will use two types of trim. (Angle trim and J-trim) The angle trim will finish off and cover the door frame verticals and header. The J-trim will be fastened around the outside of the frame to finish and cover the edges of the sheet metal panels. If the garage door is in the end wall the angle trim will be 3" x 1 1/2" (the 3" side is hemmed). If the door is in the side wall the angle trim will be 4" x 1 1/2" (the 4" side is hemmed). J-trim is the same for side or end wall doors.

J-trim comes in 10'-2" to 10'-6" lengths. Angle trim will come in 10' lengths.



Cut one piece of angle trim to fit under the door header and two pieces of angle trim to fit from the door header to the slab (side angle trim). Now, cut one piece of j-trim the width of the door opening plus 2". This piece of j-trim will fit at the door header and extend 1" on each side over the side j-trim. Make two 1" long cuts in the bottom corners of the J-trim to create tabs that will fold down into the side j-trim. (See illustration at left) Cut two pieces of side j-trim to fit from the slab to the under side of the header. Nest the side angle trim and the side j-trim together and attach both pieces with the same screws to the frame as shown above. Repeat for the other side of the door opening. Now, insert the angle trim for the door header and place the header j-trim on top of the side J-trim centered. Fold the end tabs down into the side j-trim and attach the header j-trim and header angle to the frame with screws. (use #10 x 7/8" pan head, square drive, self-drilling screws)

STEP 8: INSTALLING SHEET METAL PANELS AND TRIM

NOTE: If you will be adding insulation to the building, you must install the insulation as you install the sheet metal. The insulation will be installed between the frame and the sheet metal panels.

VersaTube offers two types of insulation. (1) "Solarguard reflective insulation from GBP and (2) "Silvercote" Faced Blanket Insulation from GBP. The face blanket insulation comes 3", 4" and 6" thick. If you are using 4" or 6" thick insulation you must use 26 gauge sheet metal panels and you will need 1 1/2" long screws to attach the sheet metal panels.

Reflective or face insulation is installed on the outside of the building frame as you install the sheet metal panels. The insulation will be applied to the building frame in the same direction as the sheet metal panels.

Reflective Insulation:

Reflective insulation is 1/4" thick fiberglass with foil on one side and white facing material on the other side. The insulation will have a 2" flap on one edge with a strip of seal tape. The other edge will have a 4" wide flap (no tape).

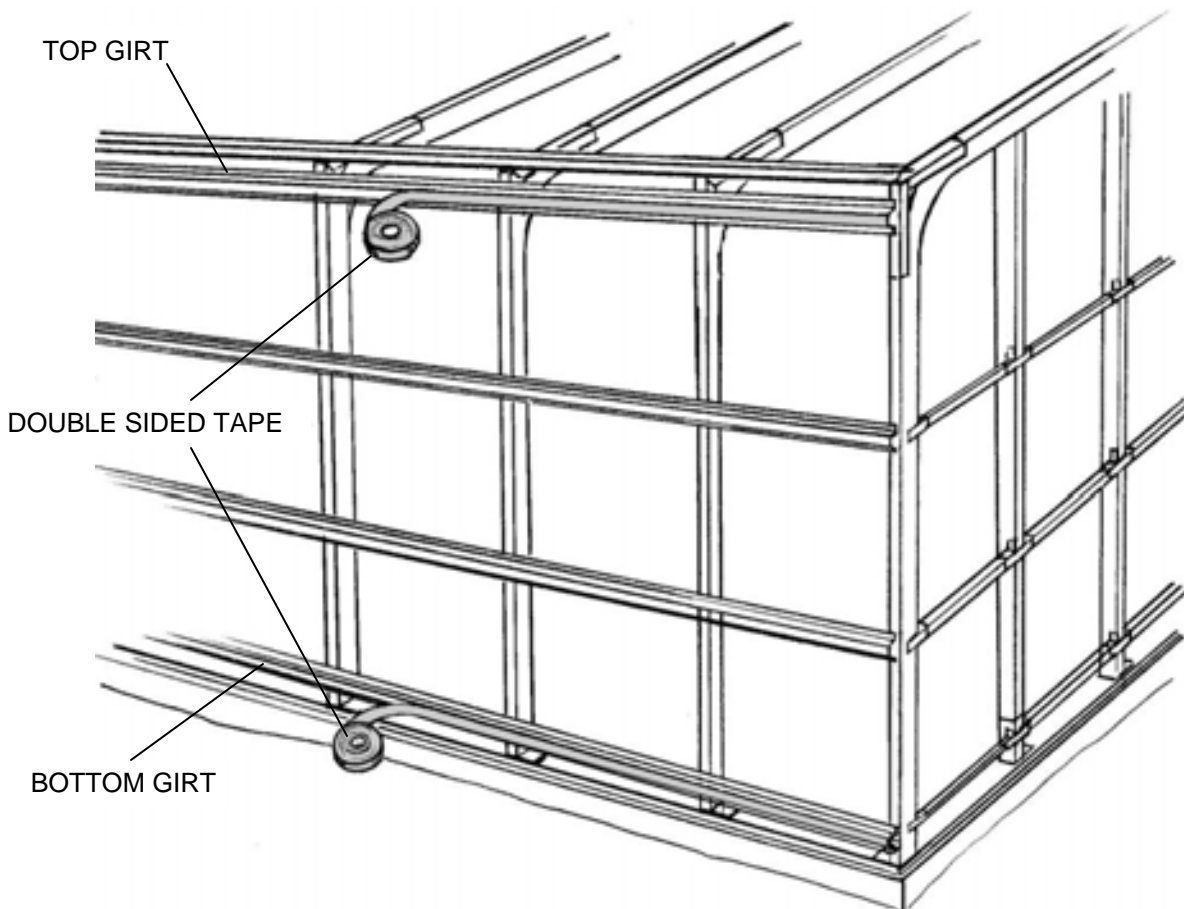
Face Insulation:

Face insulation is a fiberglass mat 3", 4" or 6" thick with a plastic reinforced facing on one side. This insulation comes with no flap on one side and a 6" wide flap on the other or 3" flap on both edges. VersaTube normally supplies the face insulation with the 6" flap or tab on one edge. **NOTE:** If you are installing 4" or 6" face insulation, you will also have to use 26 gauge sheet metal panels and 1 1/2" long screws.

The white facing side of the insulation will face the inside of the building. The insulation will be tacked to the frame with double sided tape and covered with the sheet metal panels. The panels will be attached to the purlins or girts with painted self-drilling screws with sealing washers. The insulation will be trapped between the panels and the purlins or girts. The order of installation of sheet metal panels is: (1) sides, (2) roof (3) end walls.

INSTALLATION OF INSULATION AND SHEET METAL PANELS

STEP 1: On the side of the building, apply double sided tape to the top surface of the bottom and top hat channel girt the full length of the building. Leave the protective paper strip on the tape at this time.



STEP 2:

NOTE: If you will be adding insulation to the building, you must install the insulation as you install the sheet metal. The insulation will be installed between the frame and the sheet metal panels.

VersaTube offers two types of insulation. (1) "Solarguard reflective insulation from GBP and (2) "Silvercote" Faced Blanket Insulation from GBP. The face blanket insulation comes 3", 4" and 6" thick. If you are using 4" or 6" thick insulation you must use 26 gauge sheet metal panels and you will need 1 1/2" long screws to attach the sheet metal panels.

Reflective or face insulation is installed on the outside of the building frame as you install the sheet metal panels. The insulation will be applied to the building frame in the same direction as the sheet metal panels.

Reflective Insulation:

Reflective insulation is 1/4" thick fiberglass with foil on one side and white facing material on the other side. The insulation will have a 2" flap on one edge with a strip of seal tape. The other edge will have a 4" wide flap (no tape).

Face Insulation:

Face insulation is a fiberglass mat 3", 4" or 6" thick with a plastic reinforced facing on one side. This insulation comes with no flap on one side and a 6" wide flap on the other or 3" flap on both edges. VersaTube normally supplies the face insulation with the 6" flap or tab on one edge. NOTE: If you are installing 4" or 6" face insulation, you will also have to use 26 gauge sheet metal panels and 1 1/2" long screws.

The white facing side of the insulation will face the inside of the building. The insulation will be tacked to the frame with double sided tape and covered with the sheet metal panels. The panels will be attached to the purlins or girts with painted self-drilling screws with sealing washers. The insulation will be trapped between the panels and the purlins or girts.

The order of installation of sheet metal panels is: (1) sides, (2) roof (3) end walls.

The insulation for the roof will come in poly bags that are red tagged. The insulation for all of the sides will be in bags that are blue tagged.

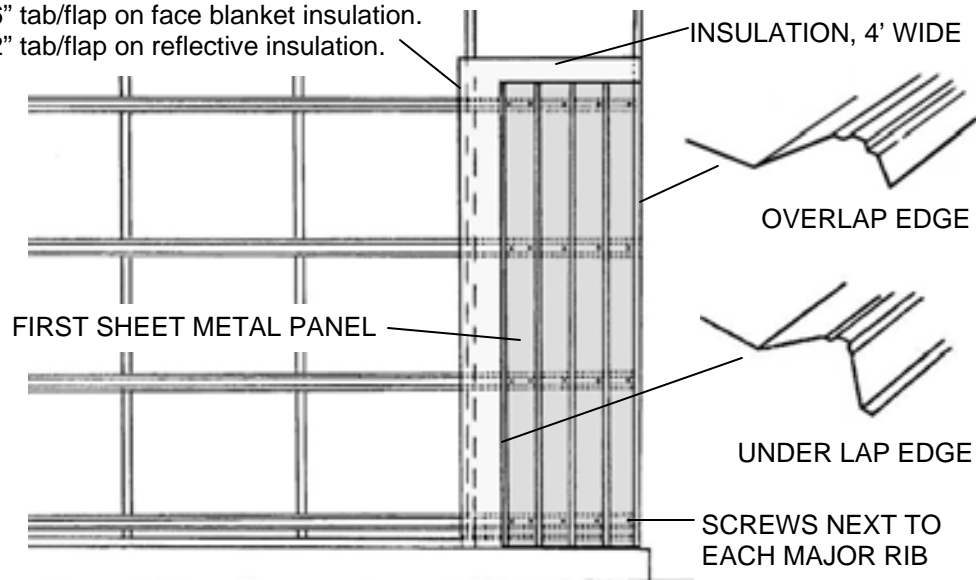
INSTALLATION OF INSULATION AND SHEET METAL PANELS

STEP 1: Cut the side insulation pieces 5" longer than the building eave height. (Example: for a building with a 10' eave height the insulation should be cut 10'-5" long) Start at one end of the building with a starter piece cut from a 4' wide roll of insulation. Peel off the protective paper on the tape that you applied to the top and bottom side girts as you go in order to adhere the insulation to the tape. Square the insulation to the building with the non-flap/tab side at the end of the building. Stick the bottom white face of the insulation to the lower girt. Leave the bottom of the insulation about 1/2" off the slab or sheeting ledge. *If the insulation is touching the slab or sheeting ledge it can wick up water.* Pull the insulation tight and stick the top to the top girt. Now, install the first sheet metal panel with the overlap edge flush with the outside of the end wall frame. The bottom of the panel should sit down in the sheeting ledge or on top of the slab if a sheeting ledge is not provided. Be sure that the panel is plumb. The first panel will set the tone for the rest of the panels.

Attach the panels to the hat channel girts with a #12 x 1" painted, self-drilling screw with sealing washer about 1" from each major rib. (If you are installing 4" or 6" face blanket insulation, you will need #12 x 1 1/2" long screws) (If you are installing 6" face blanket insulation, mark the location of the girts on the fiberglass side of the insulation and using a utility knife score and strip out a section of insulation about 1 1/2" wide x 1 1/2" deep. The removal of 1 1/2" of fiberglass will allow the sheet metal panels to be attached to the girts without dimpling the panels.

6" tab/flap on face blanket insulation.

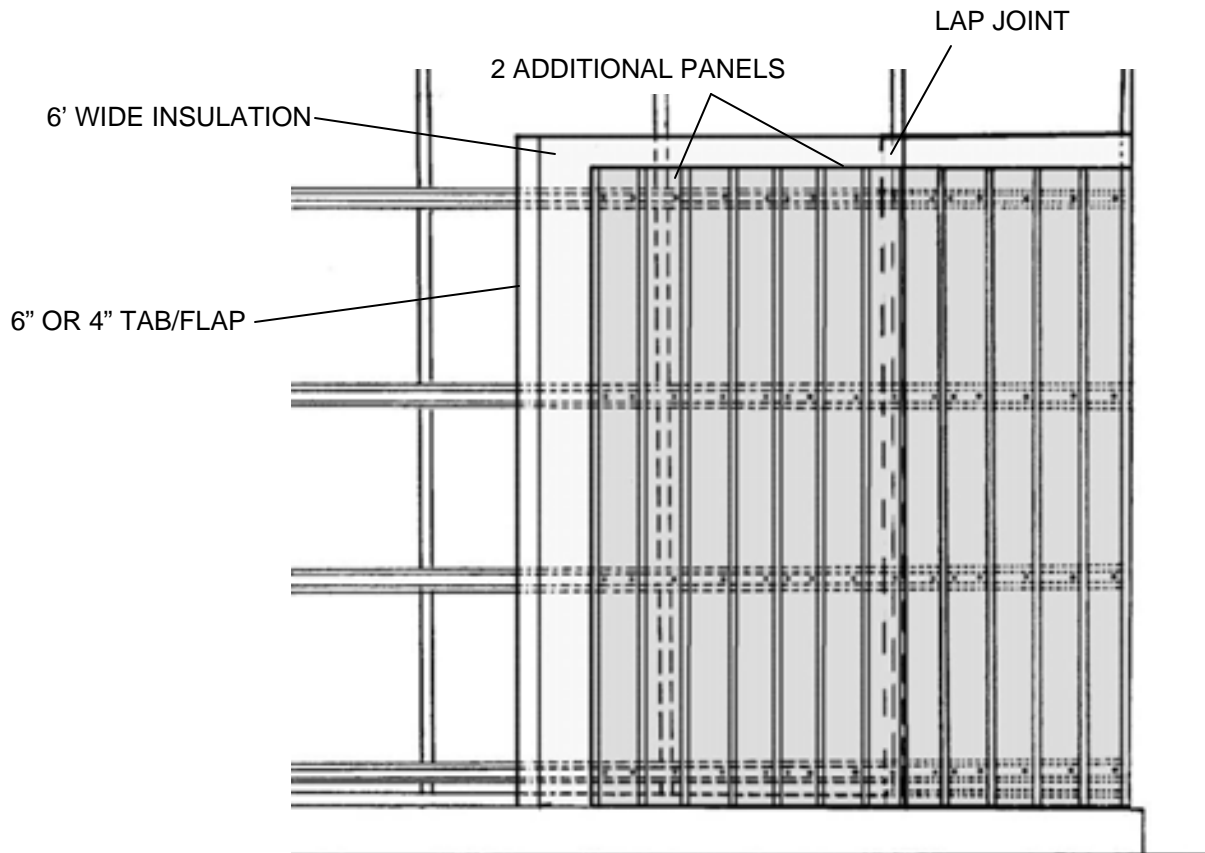
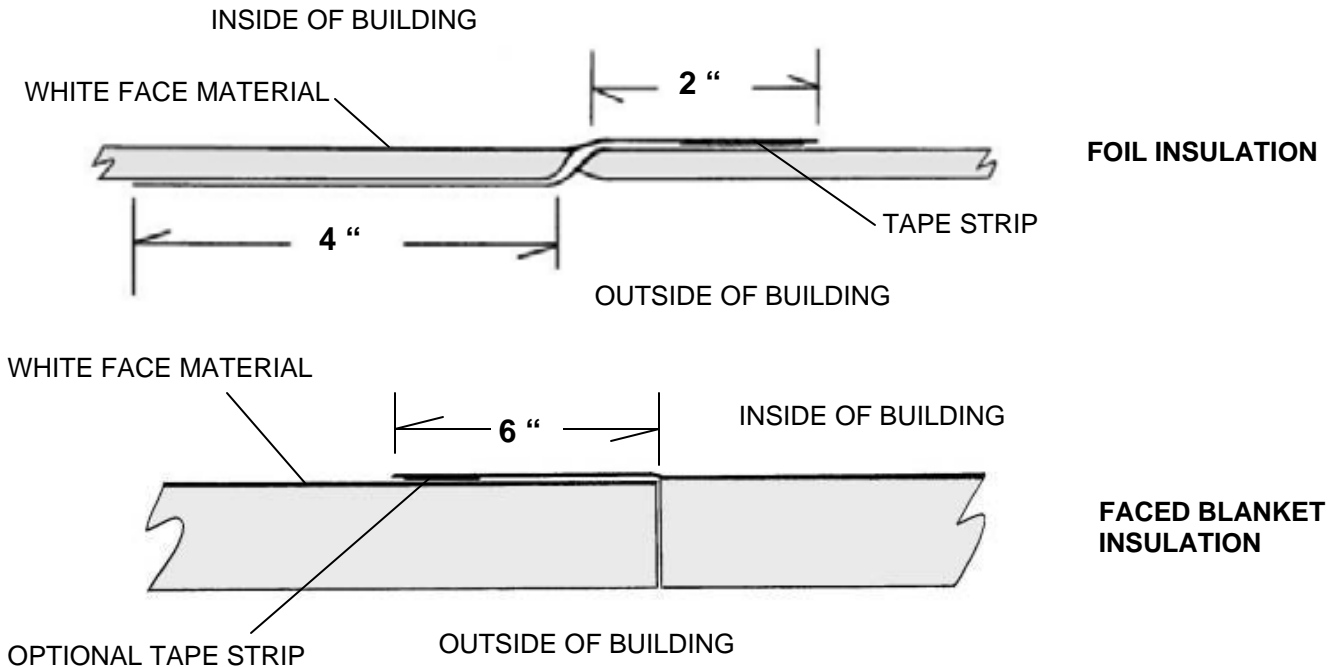
2" tab/flap on reflective insulation.



#12 X 1" PAINTED
SELF-DRILLING SCREW
WITH SEALING WASHER

STEP 2: INSTALLING ADDITIONAL SIDE PANELS

If you are installing Insulation you will now cut a piece of 6' wide insulation 5" longer than the eave height of your building. 6' wide insulation will be used down the full length of the building. peel the protective paper off of the double sided tape and stick the insulation (white face in) to the tape at the bottom, pull it tight to the top girt and stick it to the top girt. The starting end of the insulation should butt tightly up against the previous piece of insulation. The insulation will sit on top of the 6" or 2" flap on the previous piece of insulation. If you ordered insulation with seal tabs, peel off the protective paper and stick the tab/flap from the previous piece of insulation to the piece that you just installed. If you are installing reflective insulation the 2" tab will slide under the previous piece of insulation. Reflective insulation has a peel off adhesive strip. Peel off the cover paper and stick the tab to the previous piece of insulation. Repeat this installation procedure down the entire length of the building side. Repeat on the other side of the building.



STEP 3: INSTALLING SHEET METAL PANELS ON THE ENDS OF THE BUILDING

IMPORTANT NOTE: These installation instructions are for 5 rib panels with ribs on 9” centers. If you are installing R-Panels with 4 ribs on 12” centers, you will start installing panels from one side of the end wall and work your way to the other side. Start the first panel 1” outside of the building frame or with the center of the edge rib centered on the outside of the outside of the frame. If you are installing insulation with the R-panels apply the insulation as you did on the side walls. (4’ starter and 6’ after that)

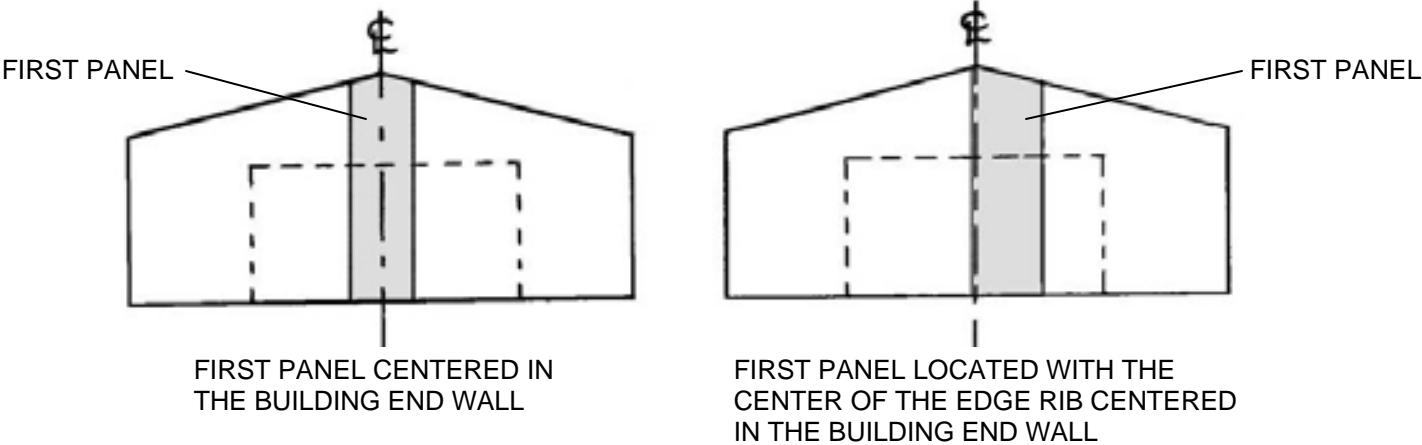
SHEET METAL PANELS: *If insulating building, see the next page insulation panel layout.*

Start your first panel in the center of the building end wall if your building width is 14’,20’, 26’, 32’, 38’, 44’, or 50’ Wide.

If the building is 16’, 18’, 22’, 24’, 28’, 30’, 34’, 36’, 40’, 42’, 46’, 48’, or 52’ wide, locate the first panel with the center of the edge rib centered in the building end wall.

The first panel may be over a door opening. It is critical that the first panel be perfectly plumb. It will set the tone for all of the panels to follow. Work from the center of the building to both ends.

Trim the panels at the corner of the building if required. **NOTE: If you are installing R-Panel you can start at one side of the end wall and work to the other side as you did the side walls.**



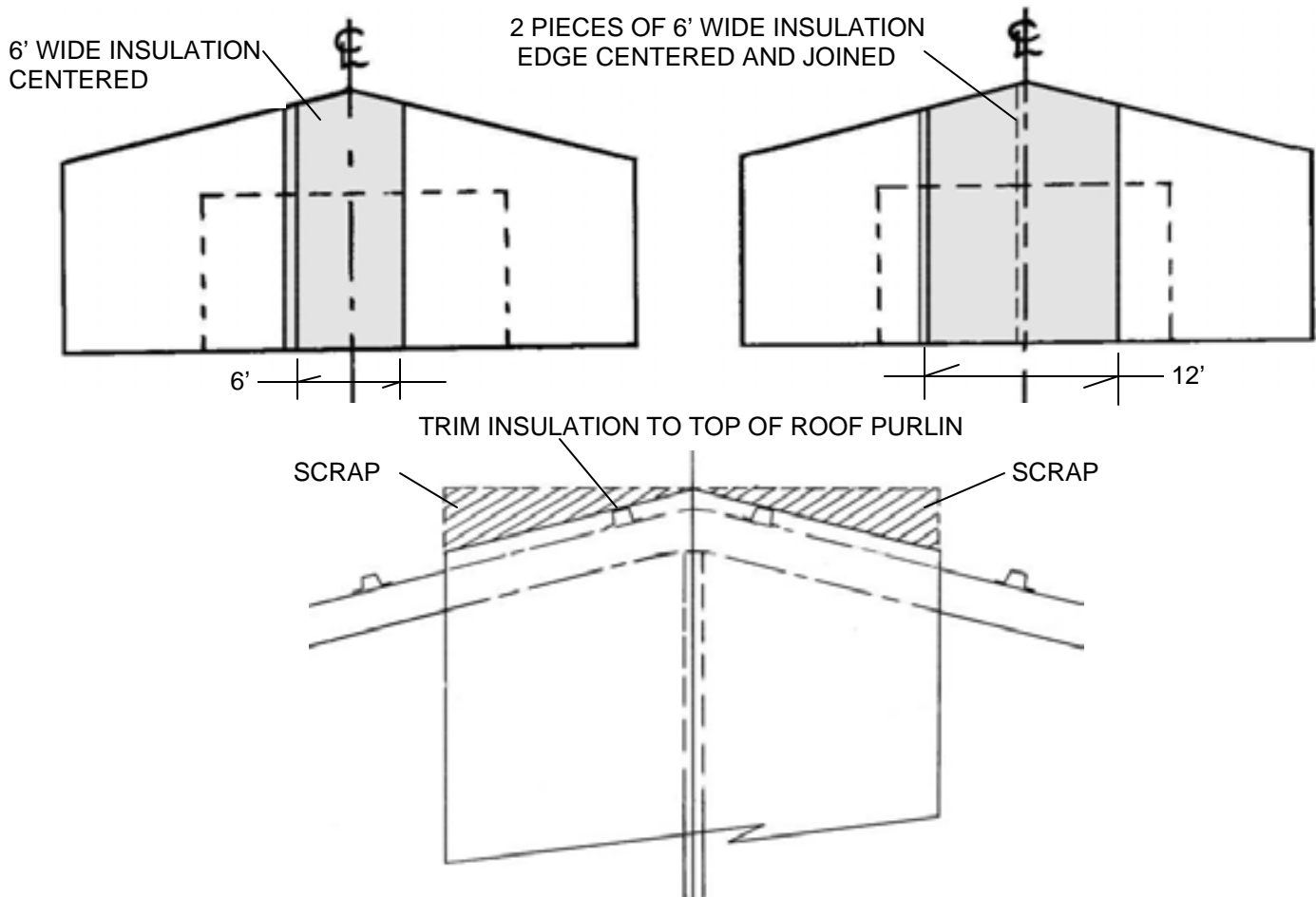
CENTER PANEL HEIGHT for 3:12 roof pitch: Each panel from the peak to the eave will drop in height 9”. The following is a list of center panel heights for 10’, 12’, 14’, and 16’ eave height buildings. For panels over door openings, subtract the door height.

CENTER PANEL HEIGHT				
Building Width	10' Eave	12' Eave	14' Eave	16' Eave
14'	11'-10"	13'-10"	15'-10"	17'-10"
16'	12'-1"	14'-1"	16'-1"	18'-1"
18'	12'-4"	14'-4"	16'-4"	18'-4"
20'	12'-7"	14'-7"	16'-7"	18'-7"
22'	12'-10"	14'-10"	16'-10"	18'-10"
24'	13'-1"	15'-1"	17'-1"	19'-1"
26'	13'-4"	15'-4"	17'-4"	19'-4"
28'	13'-7"	15'-7"	17'-7"	19'-7"
30'	13'-10"	15'-10"	17'-10"	19'-10"
32'	14'-1"	16'-1"	18'-1"	20'-1"
34'	14'-4"	16'-4"	18'-4"	20'-4"
36'	14'-7"	16'-7"	18'-7"	20'-7"
38'	14'-10"	16'-10"	18'-10"	20'-10"
40'	15'-1"	17'-1"	19'-1"	21'-1"
42'	15'-4"	17'-4"	19'-4"	21'-4"
44'	15'-7"	17'-7"	19'-7"	21'-7"
46'	15'-10"	17'-10"	19'-10"	21'-10"
48'	16'-1"	18'-1"	20'-1"	22'-1"
50'	16'-4"	18'-4"	20'-4"	22'-4"
52'	16'-7"	18'-7"	20'-7"	22'-7"

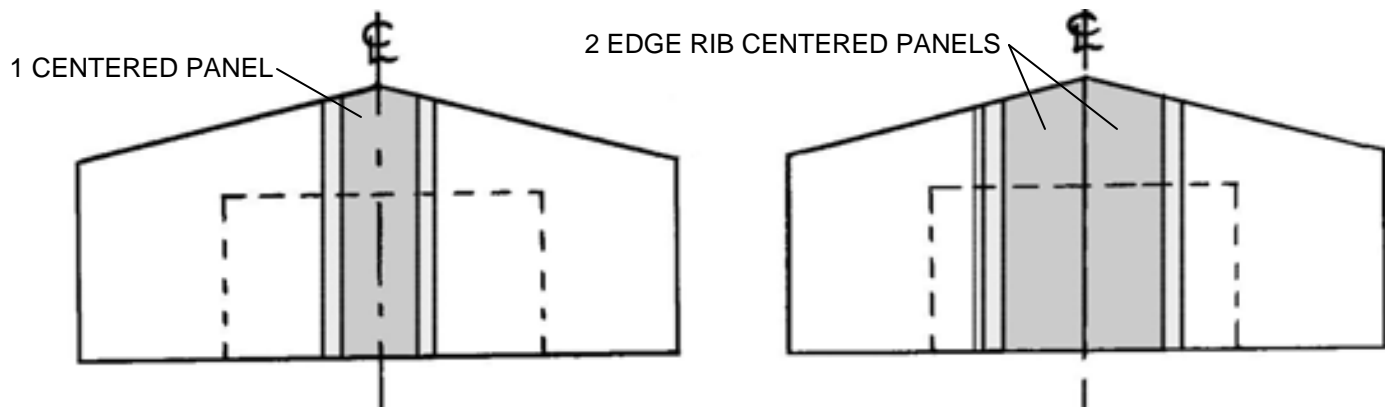
INSTALLING INSULATION ON THE END WALLS OF THE BUILDING:

- Place your double sided tape on the lower flush mounted girt and on the frame at the top and around door or window openings as needed.
- Trim the top of the insulation to fit flush with the top of the roof hat channel purlins on the roof pitch angle (3/12).
- Trim around doors and windows. Use double sided tape to hold insulation in place as you install sheet metal panels.
- Insulation panels will interlock via the same method as on the sides of the building.

We recommend that you use all 6' wide insulation on the ends of the building. You will start the first 6' piece of insulation centered in the building width if the building is 14', 20', 26', 32', 38', 44', or 50' wide. If the building is 16', 18', 22', 24', 28', 30', 34', 36', 40', 42', 46', 48', or 52' place one edge of a 6' piece of insulation in the center of the building and the other edge of another piece of 6' insulation joined to the first piece. The insulation joint will be in the center of the end wall.

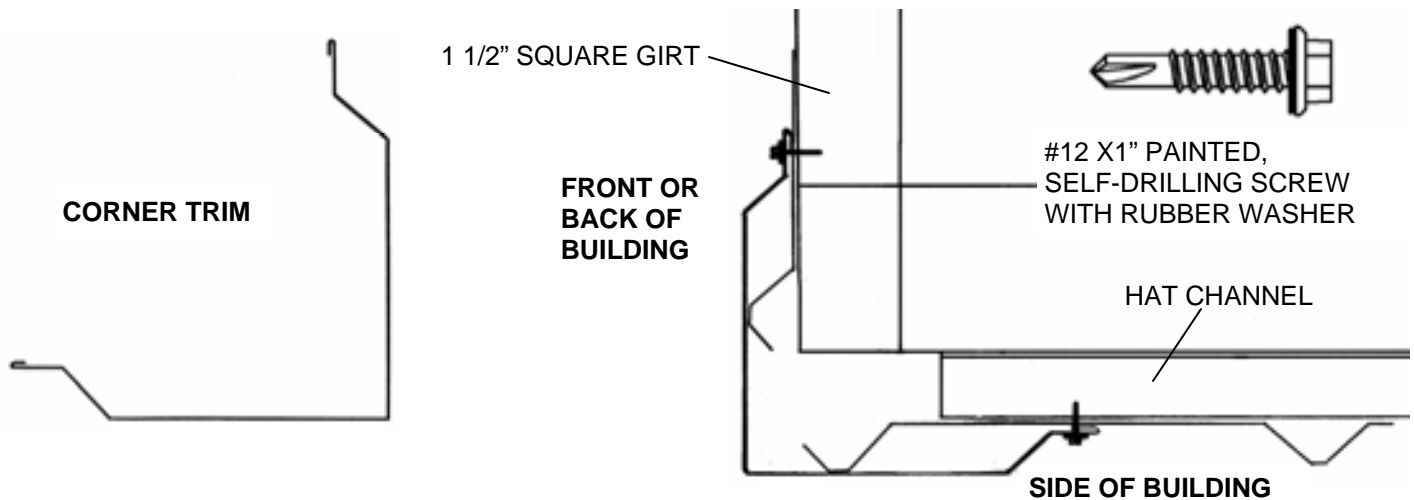


Install sheet metal panels starting at the center of the building. See the previous page for center panel height. Continue to install 6' insulation strips and sheet metal panels to the ends of the end wall. Trim as needed at building corners.



STEP 4: INSTALLING CORNER TRIM

Cut corner trim to fit the corner height of your building. If the building has a eave height over 10' you will need to cut two pieces of corner trim and overlap them at least 2" at a side girt. Corner trim should sit down in sheeting ledge if your slab has one. Install Corner Trim on the 4 corners of the building with 1" Painted, Self-Drilling Screws (trim color). Install the screws through the flat flanges at the edges of the trim into the wall girts.



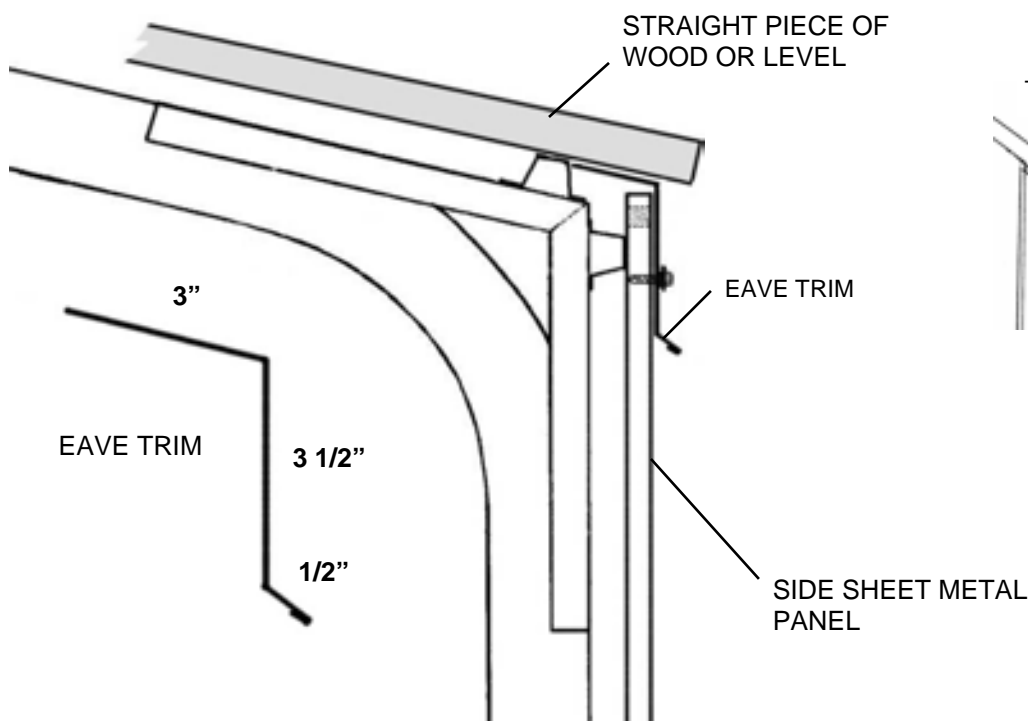
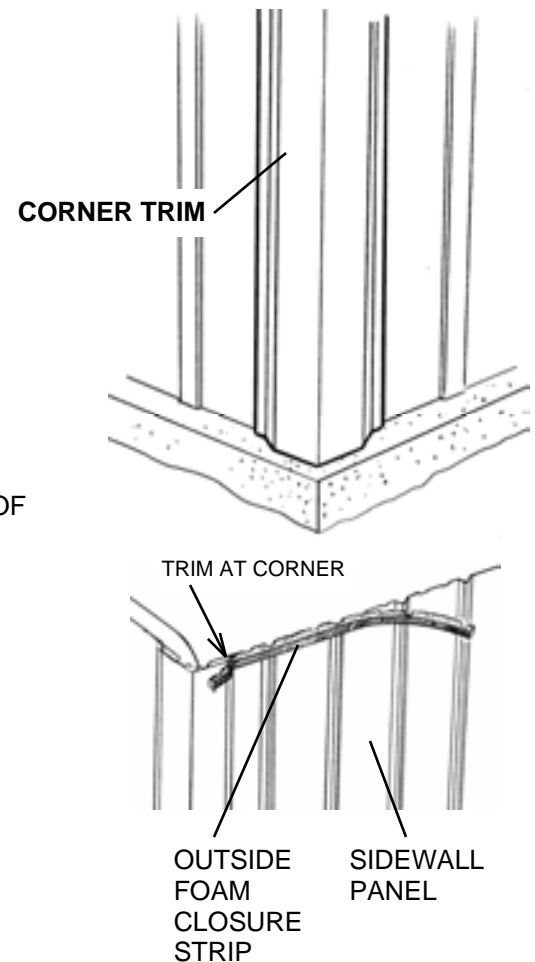
STEP 5: INSTALLING EAVE TRIM

Install Outside Foam Closure Strips along the outside, top edge, of every side panel before you install Eave Trim. Trim the Closures as needed at the corners of the building. (See illustration at lower right.)

Attach the Eave Trim at the top of the side sheet metal all the way down both sides of the building with #12 x1" Painted, Self-Drilling Screws with Rubber washers. Place the screws into the center of every other major rib.

To position the Eave Trim place a straight board or level on top of the roof purlins and extend it out to act as a stop for the top of the Eave Trim. See the illustration below. Eave Trim comes in 10' lengths. You will need to overlap the trim about 3" at the ends. Trim excess at end of building flush with the outside of the corner trim.

Eave Trim should overlap Corner Trim. Your trim will look better if you start at the back of the building and work forward.



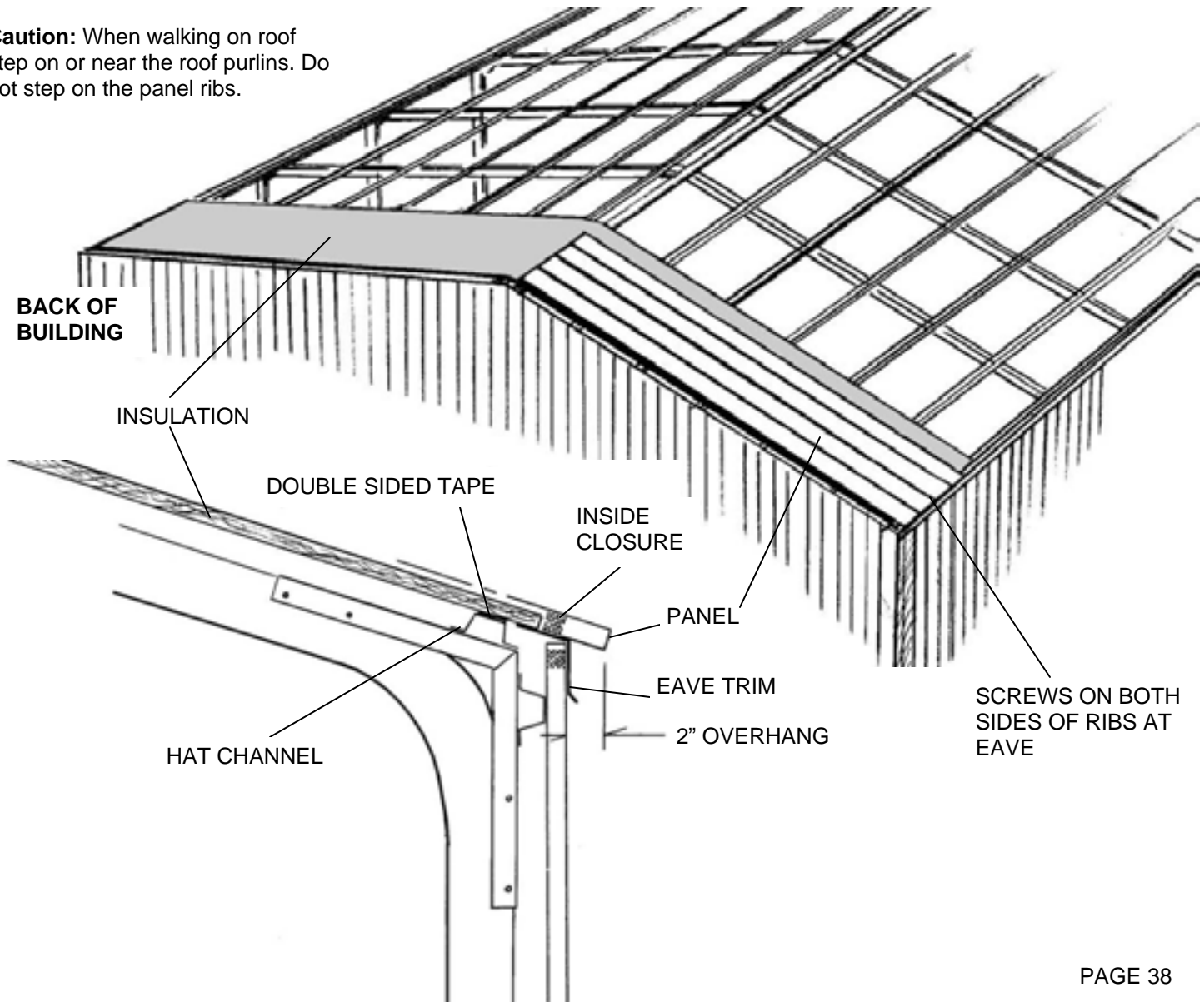
STEP 6: INSTALLING ROOF SHEET METAL PANELS

LENGTH OF ROOF PANELS: 12' wide 6'-5", 14' wide 7'-6", 16' wide 8'-6", 18' wide 9'-6", 20' wide 10'-7", 22' wide 11'-7", 24' wide 12'-7", 26' wide 13'-8", 28' wide 14'-8", 30' wide 15'-9", 32' wide 16'-9", 34' wide 17'-9", 36' wide 18'-10", 38' wide 19'-10", 40' wide 20'-10", 42' wide 21'-11", 44' wide 21'-11", 48' wide 25', 50' wide 26', 52' wide 27'-1".

Roof sheet metal panels are installed in the same manner as you installed the sides panels. See the notes below about roof panel installation.

1. Start at the back of the building.
2. If you will be installing insulation, install the insulation from eave to eave of the building. Use double sided tape at the eaves, peak and points in between as required by the width of your building. Remember to start with a 4' width of insulation and then 6' widths of insulation. *See illustration and eave detail below.*
3. The roof panels should be positioned to allow a 2" overhang at the eaves of the building.
4. install screws on both sides of the major panel ribs at the eave of the building.
5. You must install inside foam closures as you go to the under side of the sheet metal panels at the eave end of the panel. The closure should be located about 3 1/2" from the end of the panel. Closure strips have a tack strip to keep them in place on the panel.

Caution: When walking on roof step on or near the roof purlins. Do not step on the panel ribs.

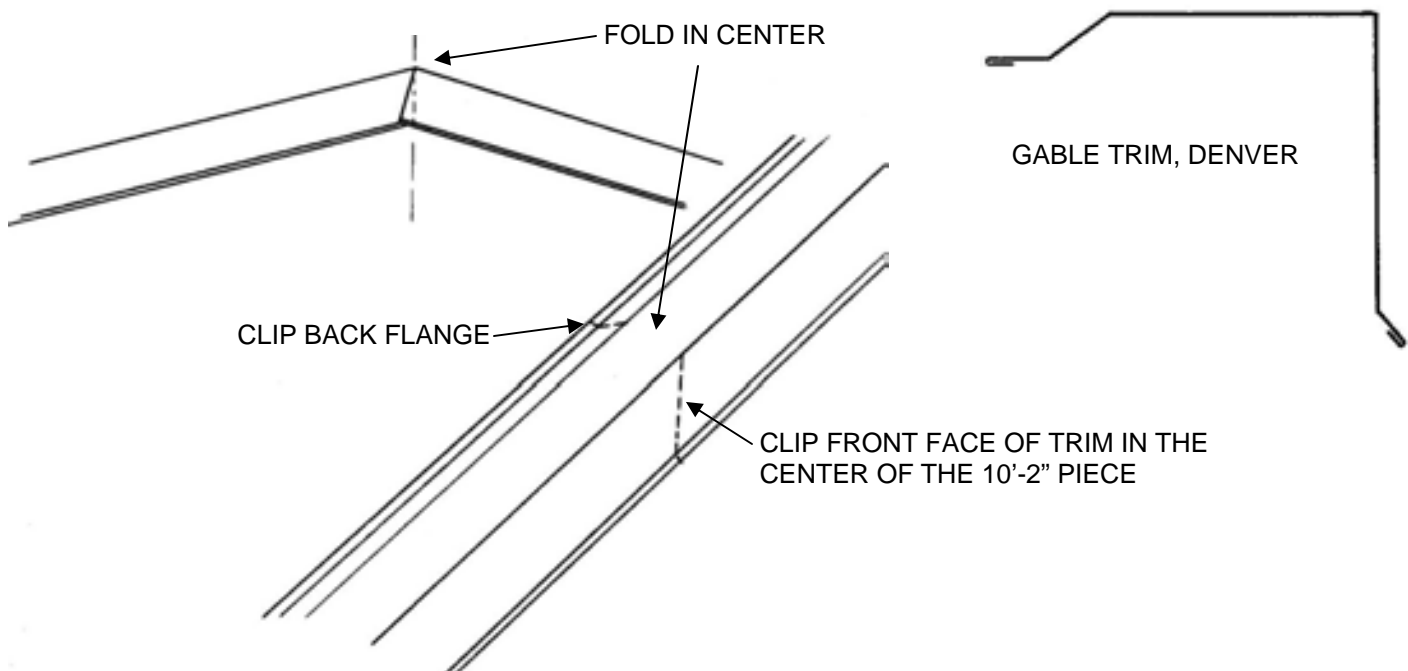


STEP 7: INSTALLING GABLE TRIM

Gable trim will be Denver Style trim about 5 1/2" deep and 10' to 10'-2" long.

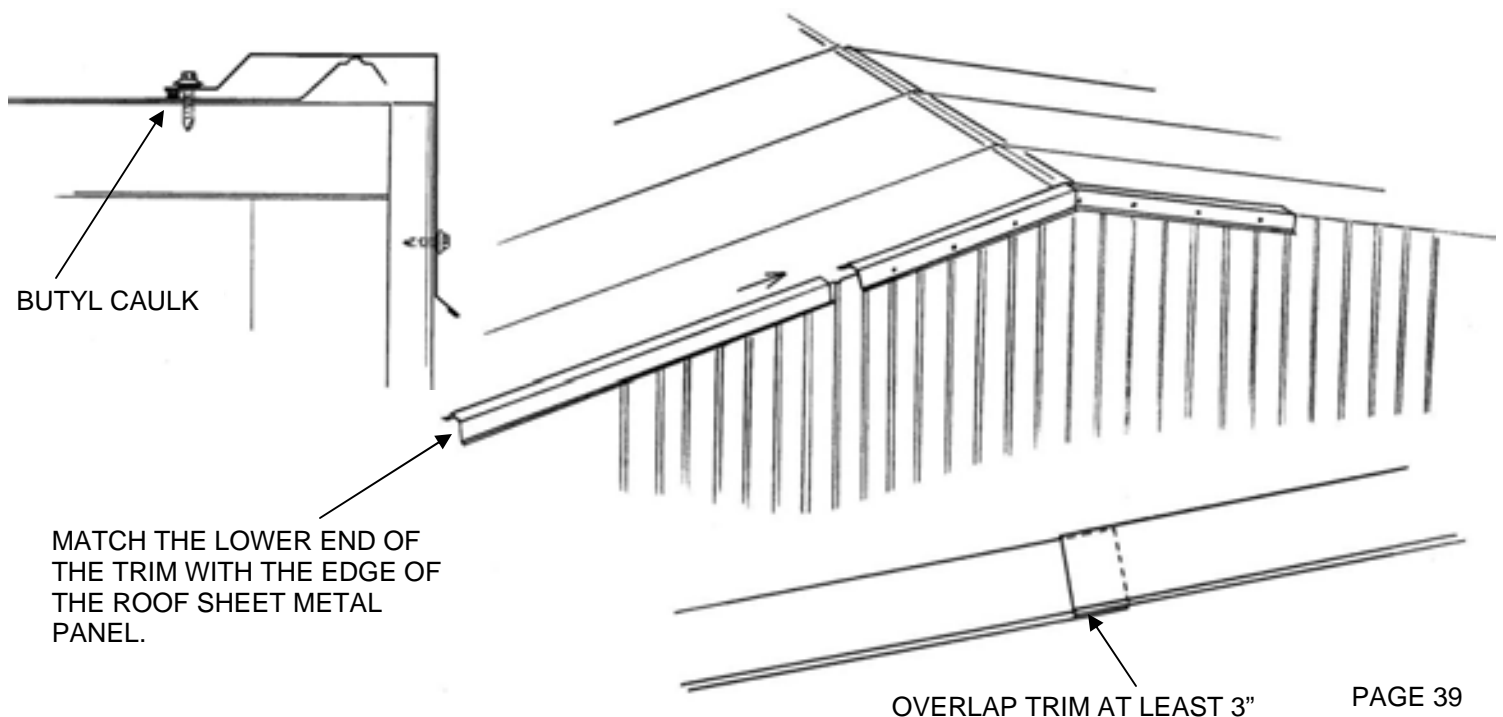
Most buildings will require a piece of trim clipped and folded at the peak and at least one extension piece on each side. Wider buildings will require additional extension pieces.

Clip one piece of trim in the front center and also the top back flange to allow the trim to fold at the peak. See illustration below.



GABLE TRIM TO BUILDING:

Install a bead of butyl caulk with protective paper to the under side edge of the back trim flange. The paper will be removed before you install screws. Place the folded piece of gable trim at the peak of the building as shown. Keep the trim square to the building and attach the trim to every other rib on the front or back sheet metal panels. Insert additional pieces of trim on both sides of the building, overlapping the trim at least 3", until you get to the lower edge of the roof panels. The trim should be flush with the lower edge of the roof panels. You may have to cut the last section of trim to fit. With the trim screwed to the front sheet metal, now remove the paper from the butyl caulk and press the back flange of the trim to the roof panel. Keep the trim square with the building. Install screws through the flange and roof panel into the roof purlins (hat channels). Repeat on the other end of the building.



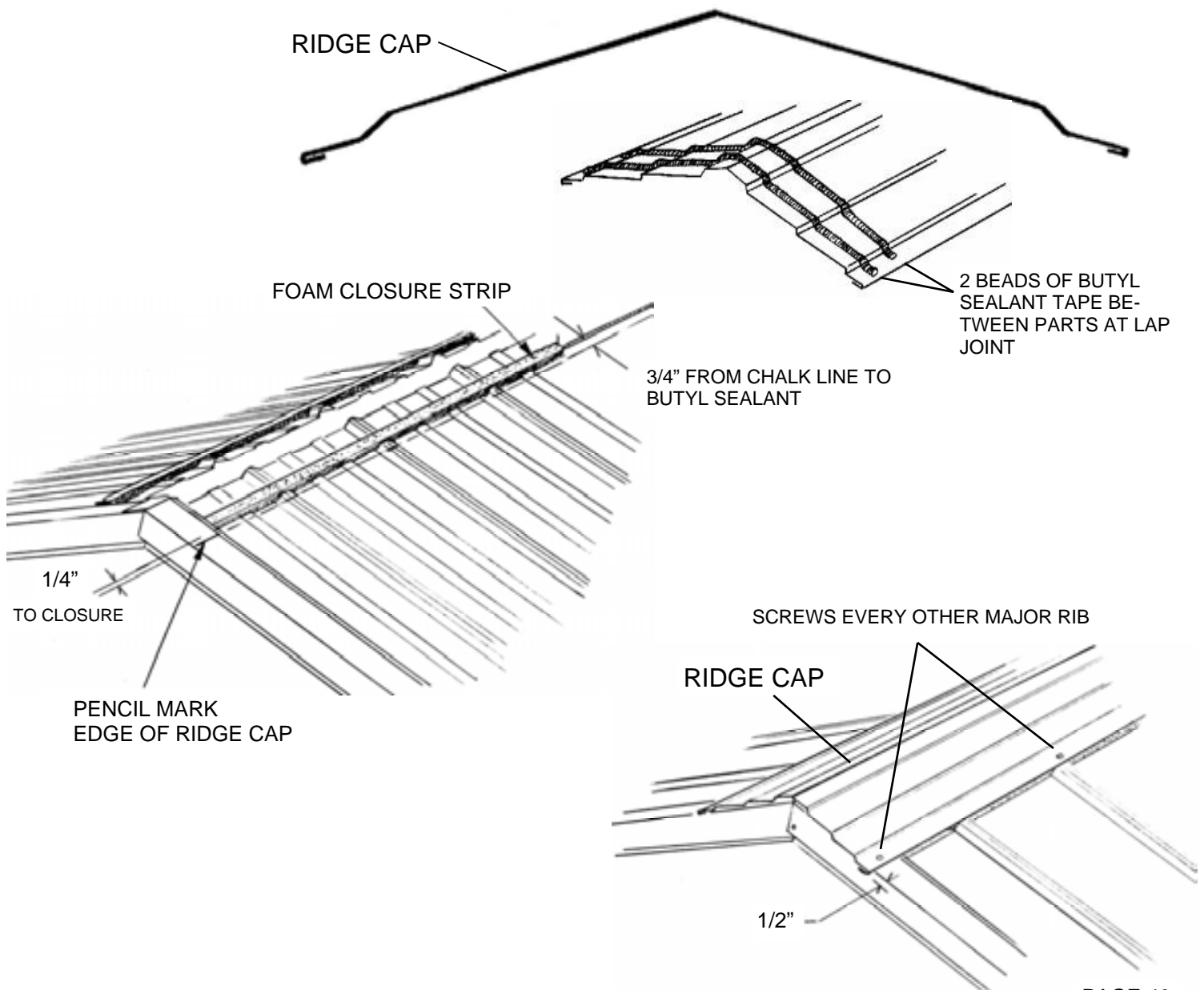
STEP 8: INSTALLATION OF RIDGE CAP

RIDGE CAP WILL COME IN 10'-6" LENGTHS. YOU WILL OVERLAP PIECES 6" UNTIL YOU GET TO THE OTHER END OF THE BUILDING WHERE YOU WILL TRIM THE LAST PIECE TO FIT. THE RIDGE CAP SHOULD OVERHANG THE GABLE TRIM 1/2" AT BOTH ENDS OF THE BUILDING.

Place a piece of ridge cap on the peak of the building. Center it and make a mark at the lower edges at the end of the building. Do the same thing at the opposite end of the building and snap a chalk line between the marks. This will make the ridge cap easier to line up and provide a measuring point for locating butyl sealing tape and outside foam closure strips.

If your closures do not have a sealing strip, apply a bead of butyl sealing tape to the roof panels the full length of the building 3/4" up from the chalk lines on both sides of the roof. Now, press outside closure strips to the butyl tape all the way down the building on both sides of the roof. The edge of the closure should be 1/4" up from the chalk line.

Install the first piece of ridge cap on the peak at the back of the building. Let the ridge cap overhang the gable trim by 1/2". Fasten with 1" painted, self-drilling screws through the edge flange and into the top of every other major rib. Run two beads of butyl tape at the end of the first piece of ridge cap to seal it to the next overlapping piece of ridge cap. Lap the next piece of ridge cap 6" over the first, press the seam together and so on down the building. The last piece should overhang the gable trim at the other end of the building 1/2".



INSTALLING YOUR GARAGE DOOR IN A VERSATUBE FRAME

Note that the Versatube frame is all steel with no overhead ceiling joist. You must deviate from the door manufacturer's instructions to install the garage door in the Versatube frame. The following is a list of the installation steps that will be different from the door manufacturer's assembly instructions:

1. It is not necessary for you to frame out your door opening with 2 x 6 lumber. Track brackets will be attached directly to the steel door frame.
2. If you have a door with torsion springs instead of a extension springs you will need to attach a center vertical over the door header.
3. You will fasten all brackets an channels to the Versatube frame with #12 self-drilling screws instead of the lag screws provided with your door.
4. The garage door manufacturer's instructions call for assembling all of the door sections one at a time and using 3" nails bent over to hold the sections in place. With the Versatube frame you will assemble only the first or bottom door section and use it as a guide to locate and attach the vertical tracks to the door opening.

TIP: You should have two people to install the garage door.

Step 1 Track and Flag Brackets to Vertical Track

Install mounting brackets and flag bracket to the vertical rails according to the manufacturer's instructions.

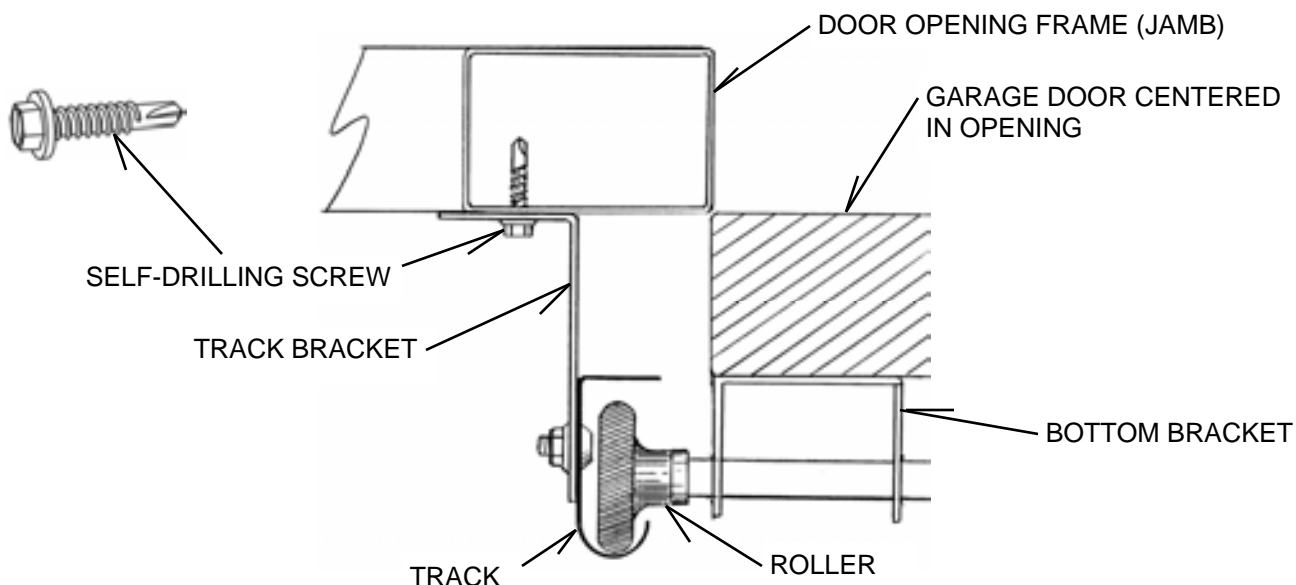
Step 2 Assemble Door Section 1

Assemble door section #1 according to the manufacturer's instructions including the bottom weather strip, the bottom wheel brackets and the correct hinges. Insert 4 rollers into bottom brackets and hinges and place the first door section in the door opening with the front of the door flush with the back of the door frame. Center the door side to side. One person must hold the door in place or brace it up with something on both sides.

Step 3 Installing Vertical Door Tracks

Slide the left vertical door track onto the wheels. Use your level to plumb the track and fasten the bottom track bracket to the door frame with a #12 self-drilling screw (the same screws used to assemble your frame).

Plumb the track and attach the next higher bracket to the door frame. Continue to plumb and attach all brackets and flag bracket to the frame with self-drilling screws. When all brackets are installed go back and install one additional screw in each bracket. Repeat this assembly for the right door track.



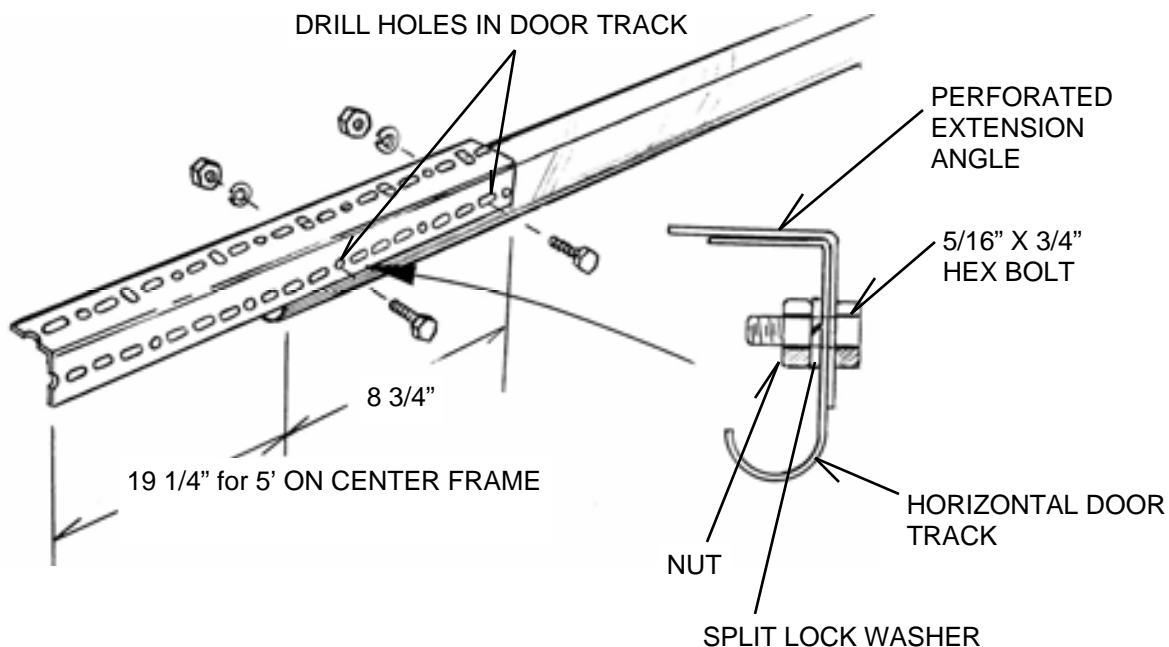
Step 4 Installing Additional Door Sections

Follow the door manufacturer's instructions and assemble door section 2. Note that each door section uses a different height hinge at the ends of the door and the same size hinge in the center of the door.

When the second door section is assembled, install the rollers and install the door section into the vertical door tracks sliding it down from the top of the tracks. With the section in place attach the door hinges connecting section one to section two.

Repeat this assembly for door section three. If your door is taller than 7' install all but the top section. The top section will be installed after the horizontal track (and low headroom kit if required) is installed.

If the Versatube building that you have has 4' on center frame spacing you will tie the back of the horizontal tracks up to the rafter above at the end of the tracks. If the your building has the frame sections on 5' centers you will have to add an extension piece of perforated angle (1 1/2" x 1 1/2" x 16 GA.) to your tracks. This extension will allow you to connect the vertical perforated angle to the rafter above. (See illustration on next page) Perforated angle is not provided. For 5' on center frames cut the angle lengths to 28". Measure from the back of the horizontal tracks 8 3/4" and make a mark on the outside of the track. Place the extension angle piece on the track as shown with the end of the angle extension lined up with your mark. Clamp the track and extension angle together and drill two 5/16" hole through the door track using the two of the holes in the perforated angle as a guide. (See illustration) Attach the extension angles to the door tracks with two 5/16" x 3/4" hex head bolts with split lock washers and nuts as shown. Nuts and bolts are not provided.



Step 5

Attach the Horizontal Tracks to the Vertical Tracks following the manufacturer's instructions. If you are attaching a low headroom kit you will also refer to the instructions included with that kit. To temporally support the back of the tracks use a string tied to the back of the perforated angle extensions. You should be able to find a place to lace the string through the sheet metal and over the rafter. If you prefer, you can drive a self-drilling screw into the side of the rafter part way and tie the string to the screw.

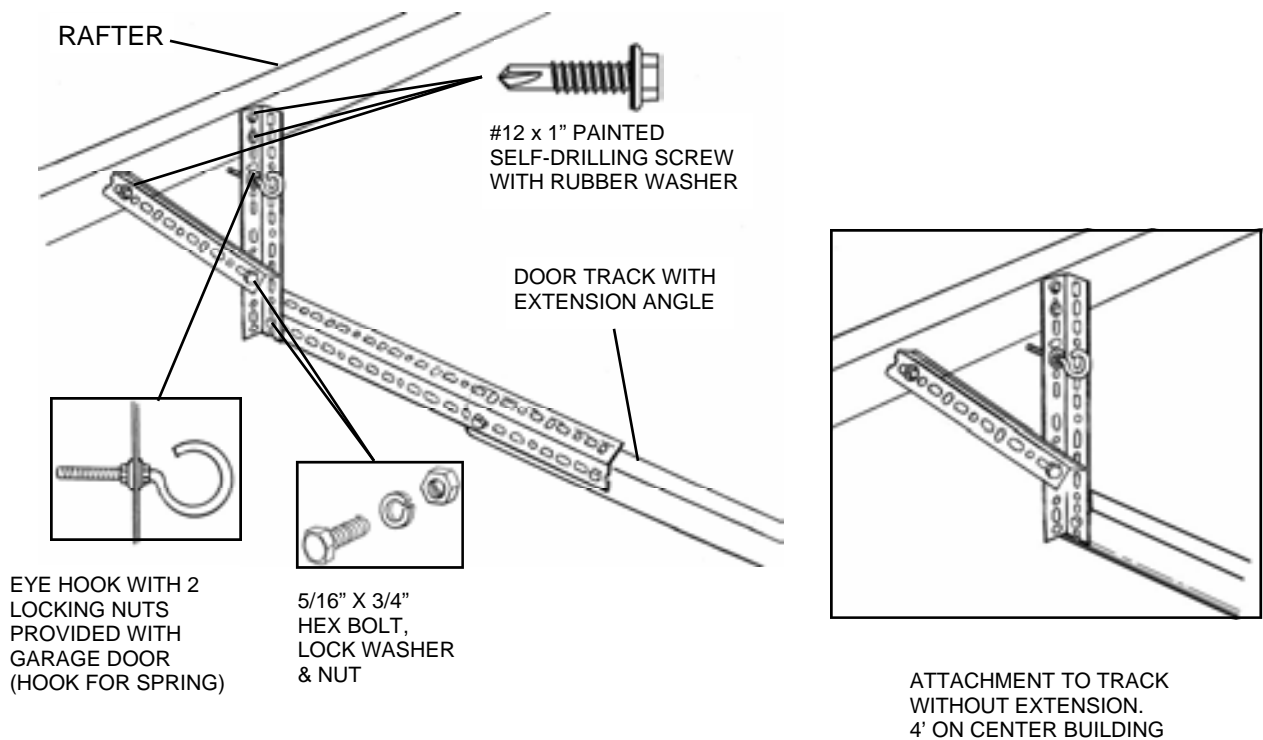
The back of the perforated angle extension (that you attached to the horizontal tracks) will be fastened vertically to the rafter above with a piece of perforated angle and a brace piece placed at an angle. Use 5/16" x 3/4" hex bolts with lock washers and nuts (not provided) to attach the angle pieces together and #12 x 1" painted self-drilling screws with rubber washer (the same screws you used to attach the sheet metal on the building) to attach the perforated angles to the rafter above.

Note: The perforated angle and 5/16" x 3/4" hex bolts, lock washers and nuts are not provided with the garage door or conversion kit. They must be purchased separately. See illustration on next page.

ATTACHMENT OF DOOR TRACK WITH & WITHOUT EXTENSION ANGLE TO RAFTER IN BUILDING WITHOUT A LOW HEADROOM KIT INSTALLED.

Before you start, make sure that the tracks are level and square to the front of the building. Use your level to set the track level and measure the diagonals from the back of one track to the front of the other. The diagonals must be equal. See illustration in door manufacturer's instructions.

Cut a piece of perforated angle to fit vertically as shown and fasten it to the back of the track, or the extension angle, with a 5/16" x 3/4" hex bolt, lock washer and nut. Fasten the top portion to the rafter with two Painted self-drilling screws with rubber washers (the same screws you used to attach the sheet metal to your building). Now, cut a piece of perforated angle to create an angle brace as shown and attach it to the track extension just above the extension with a 5/16" x 3/4" hex bolt, lock washer and nut. Attach the brace to the rafter with a painted self-drilling screw.



ATTACHING THE SPRING HOOK (EYE BOLT)

The spring hook should be attached to the vertical brace about 12" above the track extension. Place a flanged, locking hex nut on the eye bolt the full extension of the threads with the flange to the rear. Insert the bolt through the vertical brace and install another flanged hex nut as shown. Tighten the nuts.

IF YOUR BUILDING HAS FRAME SECTIONS ON 4' CENTERS, YOU WILL NOT NEED A PERFORATED TRACK EXTENSION. YOU WILL ATTACH THE END OF THE DOOR TRACK TO THE RAFTER WITH A VERTICAL BRACE AND AN ANGLE BRACE AS SHOWN ABOVE RIGHT. THE VERTICAL BRACE WILL ATTACH TO THE LARGE HOLE AT THE BACK OF THE DOOR TRACK.

INSTALLING THE TOP DOOR SECTION

With the door tracks installed it is now time to install the last or top door section.

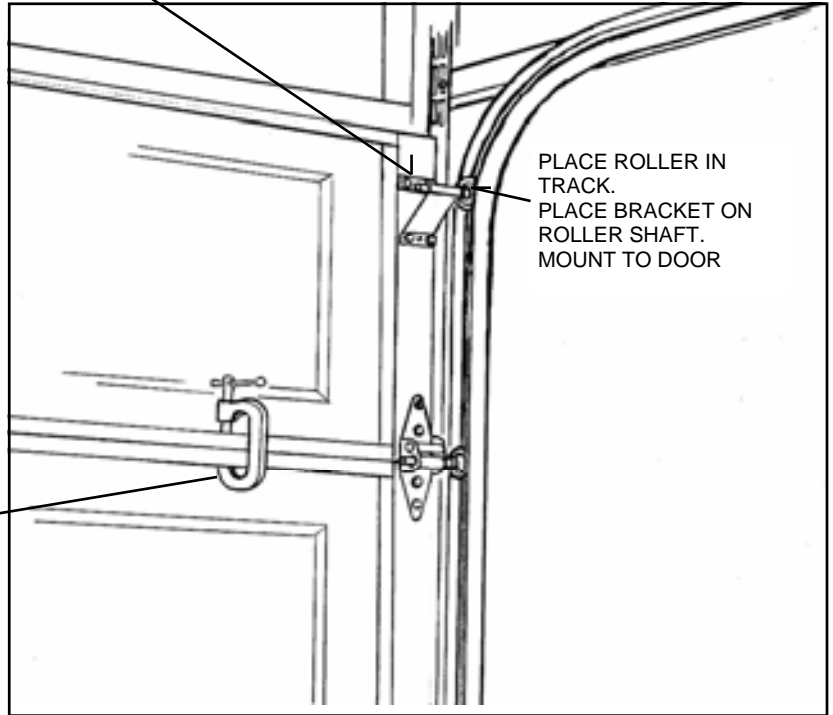
Place the last door section on top of the section before. Center it side to side and clamp the bottom of the top section to the lower section or have a helper hold the bottom of the section in place while you attach the hinges connecting the sections at the center and both ends.

Take a roller, lace it into the track or low headroom track, place the top roller bracket onto the roller shaft, position the bracket on the top door section and attach it to the door with sheet metal screw. Repeat on other end of top door section.

TOP BRACKET THAT COMES WITH GARAGE DOOR. LOCATE 3 1/4" DOWN FROM TOP OF DOOR

PLACE ROLLER IN TRACK.
PLACE BRACKET ON ROLLER SHAFT.
MOUNT TO DOOR

CLAMP OR HOLD DOOR SECTIONS TOGETHER WHILE INSTALLING HINGES.



Make all necessary adjustments to the track brackets to allow the door operate smoothly. See the door manufacturer's instructions for all adjustments.

Refer to the door manufacturer's instructions for spring installation. If you have a torsion spring door, Mount the center bearing plate with #12 x 1" painted, self-drilling screws with rubber washers instead of 5/16" x 1 1/2" lag screws. Pre drill one additional 1/4" hole in the plate between the existing holes prior to mounting. Use 3 screws.

INSTALLING DOOR SEALS

Door weather seal strips are available at most building supply stores. You will need to purchase enough to fit around the sides and top of your garage door. Weather seal strips go on the door frame (outside the door) both sides and top of the door to seal out wind and rain.

Cut one seal to fit your door header and fasten it to the Versatube frame with painted #12 x 1" self-drilling screws with rubber washers. Place the screws about 12" apart.

Locate the weather seal strip so that the flexible seal portion presses lightly against the front of the door. Now cut to side pieces of trim to go from the bottom side of the top trim to the concrete slab. Fasten the side pieces as you did the top seal.

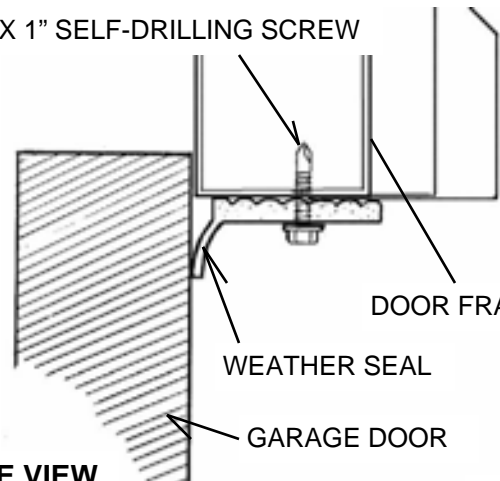
#12 X 1" SELF-DRILLING SCREW

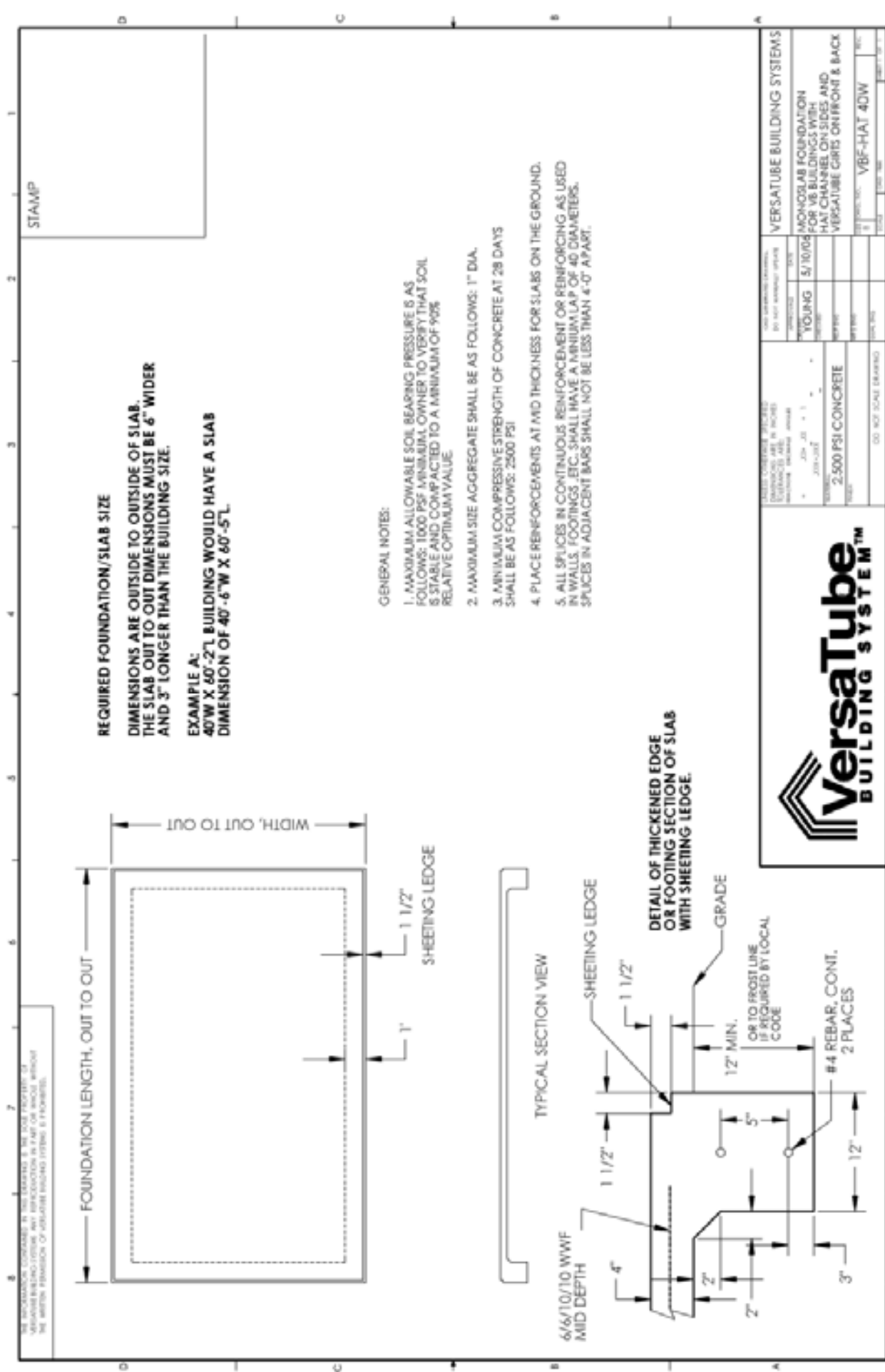
DOOR FRAME

WEATHER SEAL

GARAGE DOOR

SIDE VIEW





VersaTube™
BUILDING SYSTEM

<p>DESIGN VERIFICATION REQUIRED (EXCEPT FOR 10' X 10' FOUNDATION) VERIFICATION SHALL BE PROVIDED BY THE USER</p>		<p>VERSATUBE BUILDING SYSTEMS</p>	
<p>DESIGNER: YOUNG</p>	<p>DATE: 5/10/08</p>	<p>MONOSLAB FOUNDATION FOR VB BUILDINGS WITH HAT CHANNEL ON SIDES AND VERSATUBE GIRTS ON FRONT & BACK</p>	
<p>PROJECT: 2008-0001</p>	<p>REVISION: 01</p>		
<p>2,500 PSI CONCRETE</p>	<p>VERIFICATION: VERIFIED</p>		
<p>DESIGNER: YOUNG</p>		<p>DATE: 5/10/08</p>	



WHEN ATTACHING A WALK/ACCESS DOOR, GARAGE DOORS OR WINDOWS TO A VERSATUBE STEEL FRAME YOU WILL NEED TO FOLLOW THE DOOR OR WINDOW MANUFACTURERS ASSEMBLY INSTRUCTIONS. ADDITIONAL ASSEMBLY HINTS ARE PROVIDED IN YOUR ASSEMBLY INSTRUCTION MANUAL.

THE SCREWS PROVIDED OR RECOMMENDED BY THE DOOR/WINDOW MANUFACTURER TO MOUNT THE DOOR OR WINDOW TO A WOOD FRAME WILL HAVE TO BE REPLACED BY THE FOLLOWING VERSATUBE RECOMMENDED SCREWS TO MOUNT DOORS AND WINDOWS TO A VERSATUBE STEEL FRAME..

PRE-HUNG METAL WALK/ASSESS DOORS WITH METAL FRAMES:

#12-14 SELF-DRILLING SCREWS. PAN HEAD, PHILLIPS DRIVE OR HEX HEAD, ZINC PLATED OR POWDER COATED SCREWS. THE SCREW MUST BE LONG ENOUGH TO PENETRATE THE STEEL BUILDING FRAME AT LEAST 5/8" OR 4 SCREW THREADS.

PRE-HUNG WOOD OR METAL WALK/ACCESS DOORS WITH WOOD FRAMES:

#12-14 WOOD TO METAL SELF-DRILLING SCREWS, PAN HEAD, PHILLIPS DRIVE. A STANDARD #12 SELF-DRILLING SCREW CAN BE USED IF YOU PRE-DRILL A 1/4" HOLE THROUGH THE WOOD DOOR JAMB (NOT THE STEEL FRAME) AT EACH MOUNTING POINT PRIOR TO INSTALLING THE SCREW INTO THE STEEL BUILDING FRAME. THE SCREW MUST BE LONG ENOUGH TO PENETRATE THE STEEL BUILDING FRAME AT LEAST 5/8" OR 4 SCREW THREADS.

GARAGE DOORS:

GARAGE DOOR TRACK BRACKETS OR CHANNELS ARE USUALLY ATTACHED TO A WOOD DOORFRAME WITH 5/16" X 1 5/8" LAG SCREWS. TO ATTACH THE TRACK BRACKETS OR CHANNELS TO A VERSATUBE STEEL FRAME USE #12-14 OR #1/4-14 or 1/4"-20 X 3/4" OR 1" LONG, HEX DRIVE, SELF-DRILLING SCREWS. IF THE SCREWS ARE INSTALLED IN THE HOLES PROVIDED FOR THE 5/16" LAG SCREWS, WE RECOMMEND THAT A 1/4" FLAT WASHER BE USED UNDER THE HEAD OF THE SCREW UNLESS YOU ARE USING A WASHER HEAD SCREW.

WINDOWS:

IF YOUR WINDOW IS MOUNTED WITH SCREWS THROUGH A NAILING FLANGE, USE #10-24 X 3/4", 7/8" OR 1" PAN HEAD, PHILLIPS DRIVE, SELF-DRILLING SCREWS IN PLACE OF THE SCREWS PROVIDED OR RECOMMENDED BY THE WINDOW MANUFACTURER. IF THE WINDOW INSTALLATION CALLS FOR SCREWS THROUGH THE WINDOW JAMBS OR FRAME, SUBSTITUTE A SELF-DRILLING SCREW OF THE SAME SIZE OR LARGER. THE SCREW MUST BE LONG ENOUGH TO PENETRATE THE STEEL FRAME AT LEAST 5/8" OR 4 SCREW THREADS.

NOTE: THE RECOMMENDED FASTENERS FOR STEEL FRAMES HAVE GREATER SHEER AND PULL OUT VALUES THAN THE WOOD SCREWS USED TO MOUNT DOORS AND WINDOWS TO WOOD FRAMES.